Modern packaging



Nominated for *Packaging's Hall of Fame*. Story on Page 104

October 1950

Transparent Films

FREE CHART

Comparative characteristics



A newly compiled chart lists 14 groups of transparent films and coatings now in general use. They're set up for comparison according to types or basic chemicals, ranging from cellophane, through the different cellulose derivatives, the diafanes, to the vinyl chlorides and vinyl halide. Identification is made by physical or chemical reaction, manufacturer's description, trade names, gauge range, and characteristics in actual use. 38 trade names are listed together with manufacturers' names and addresses. This two-sided 12" x 15" chart is supplemented by a booklet that explains why it is necessary to determine definitely the classification in which the particular film or coating belongs, and its properties and reactions to different adhesives, before attempting to bond any of these films.

National ADHESIVES

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Please send me a free copy of National's TRANSPARENT FILMS CHART and BOOKLET.

Mr. _____

Company _____

Address _____

City _____ Zone _____ State _____



Phoenix Metal Cap Co. Chicago & Brooklyn

Modern packaging

Vol. 24 No. 2 October 1950

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It's *Automatic* with REDINGTON

Ilford Limited of Romford, Essex, England, one of the world's leading producers of rollfilm and other photographic materials, needed high-speed, automatic handling of the complete rollfilm packaging process. This requires a tight, double-fold wrap of the film roll, triple-folding an instruction leaflet and placing it over one end of the wrapped spool, opening collapsed cartons and inserting wrapped film and circular, and glue-sealing outer end flaps. A REDINGTON 24F machine, adapted for the specific use conditions, gives Ilford fast, fully automatic packaging.

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Thus the REDINGTON 24F gives Ilford economy . . labor-saving . . secure, clean sealing . . speed . . trouble-free production, assured by such exceptional design features (unusual in most equipment, standard with REDINGTON) as solid one-piece cast iron frame, individual numbering of every part, self-aligning roller bearings, ground and polished shafting, and many more.

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ON THE BEAM

WE ARE GLAD TO SEE that the program planners of the Packaging Institute have resisted the impulse toward panicky, "emergency" thinking and are presenting in their 12th Annual Forum this month what appears to be a well-balanced and constructive program. The program appears on Page 126 of this issue.

Rumor mongering of the luncheon-table variety is largely responsible for what the Department of Commerce rightly terms "an unwarranted amount of scare buying" that has resulted in "artificial shortages" of some types containers. Whether artificial or real, a shortage situation, as we all know, breeds price increases and the whole sickening spiral of inflation.

This situation must be dealt with in any packaging conference and the Institute has dealt with it properly by calling in speakers who know the facts and can be relied upon to stick to them. The speculators will get little comfort from men like Lee R. Forker of the Quaker State Oil Co., who speaks for the National Assn. of Purchasing Agents; Roy F. Segur, in charge of Containers and Packaging Planning for the National Security Resources Board, and Charles A. Lewis of the Department of Commerce.

The program gives the proper attention also to the important questions of military packaging specifications and procurement.

But it is particularly noteworthy that, having disposed of these special subjects in the opening sessions, the Institute will plunge into a normal schedule of forward-looking reports on technical and mechanical developments covering many of the fields of everyday packaging activity.

It is a good formula. In any critical period the facts must be faced and adjustments made—but these adjustments should be handled with a minimum of disturbance to normal business and long-range research and planning for the betterment of packaging should never cease.

The Editors

A Statement of Policy

In any limited supply period like the present, we regard ourselves as custodians of the material we are able to buy and are charged with the responsibility of fairly distributing it to our customers. We acknowledge a debt to those firms whose continued patronage has made our remarkable growth possible. They deserve and will get every consideration in any allocation of our services which may be necessary from time to time.

Military Requirements

Government orders will be served to the limit of our ability during the present partial mobilization stage and will be given whatever manufacturing priority may be required to support and to supply our fighting forces. We shall endeavor to follow this policy with a minimum of interference with the essential civilian business we continue to serve.

Supply Picture

Practically all transparent packaging films are on some type of allocation today. This condition was approaching even before the Korean situation developed, due to the general high level of business and an accelerated demand for transparent packaging which had outstripped production capacity. Seasonal demands are at their peak during fall and winter months. No immediate supply improvement is in sight.

Functional Uses Preferred

We can predict that manufacturers of films and foils will prefer to sell their products for uses which fully employ the protective properties of their materials. Until more capacity is available for the civilian market, less essential uses will be discouraged to accommodate the market for food and drug packaging and military needs.

Suppliers are Co-operative

Dobeckmun is proud of its suppliers. They always have been fair and reasonable in their treatment of our company which has permitted us, in turn, to become an assured supplier of a large and growing list of customers. The current conditions cannot last forever. When they do improve, we'll be knocking at your door, soliciting new business, offering ideas to improve your sales and profits.

Inquiries Invited

Right now, we invite your inquiries for any type of converted film or foil, either military or civilian. Not all raw materials are committed. Not all machine capacity is fully utilized. Whether we can serve you immediately or not, you will receive a prompt reply with our best considered suggestions. Our diversified converting of cellophane, acetate, vinyl, polythene, Pliofilm, and Saran films, as well as specialty papers, aluminum foil and cloth, inevitably gives us a broad and up-to-date picture of availability and permits informed and unbiased advice.

The Dobeckmun Company
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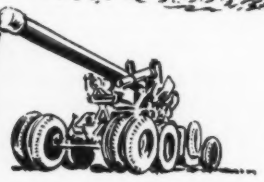
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...for new sales-building ideas

13 TYPICAL USES FOR VERSATILE GEON POLYVINYL MATERIALS

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	Geon Latex 552	Coated boxboard for food cartons—outstanding grease resistance.
	Geon Latices 351, 352 and 576	Decorative and protective coatings for wrapping paper and fiber shipping containers.
GEON POLYBLENDS for extruding packaging films and for molding liners and gaskets.	Geon Polyblend 503	Food packaging film.
GEON RESINS for calendering rigid transparent sheets, for molding gaskets and liners, and for casting or extruding packaging films.	Geon 100 and 200 series resins	Rigid transparent boxes, flexible shipping bags and bag liners.
	Geon paste resins	Protective coatings, linings, and seals.

GEON polyvinyl materials can help you improve or develop packages, trims, covers, liners, etc.—economically and profitably. For these versatile materials have a range of qualities that meet practically any need in the packaging field.

Products made with Geon resist heat, cold, aging, weather and wear. They can also be made resistant to water, oil, grease, acids and alkalies. Colors can be brilliant or delicate, as desired.

Geon materials may be used as coatings, calendered, extruded or cast into film. And though we make no finished products from any of our raw materials, we are always ready to give you helpful, technical advice. Write at any time. Please address Dept. GJ-5, B. F. Goodrich Chemical Company, Rose Bldg., Cleveland 15, Ohio.



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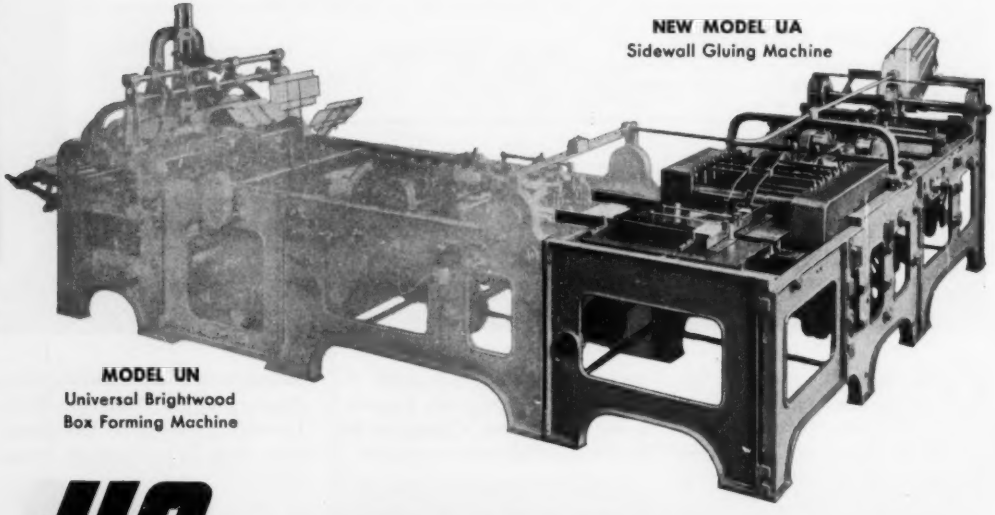
NEWS FROM US

The NEW Model UA-Sidewall Gluing Machine

Economically Sidewalls Flat Blanks for Double-Walled, Turned-over End Boxes

With the new Model UA, producers and users of double-walled, turned-over end boxes can use low cost, unprepared, flat blanks and turn out top quality boxes right in their own plants. This new sidewall gluing machine takes blanks in flat form, with sidewalls unglued. The Model UA automatically glues and folds the double sidewalls. The blanks then pass directly into the Model UN Universal Brightwood, where they are glued, formed and the ends turned over. This eliminates a separate sidewall gluing operation. The blank is sidewalled and the box formed on one complete unit. The resulting box (or cover) is one of finest appearance and maximum rigidity, with smooth edges all around. It is suitable for packaging high-quality products such as shoes, hosiery, candy bars, etc. The Model UA may be teamed up with Model UN Brightwoods now in the field or the two units can be had together.

It will pay you to write **US** *for full details on —*



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Sidewall Gluing Machine

MODEL UN
Universal Brightwood
Box Forming Machine

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proven product protection

with packages of

ALCOA

ALUMINUM FOIL



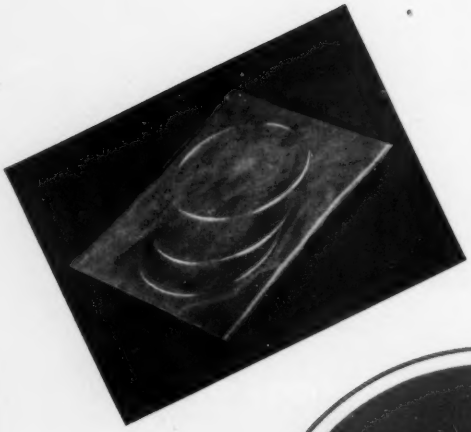
Highest product standards, plus packaging that reflects quality . . . this combination places Armour's Cloverbloom Butter high on the housewife's list of favorite foods.

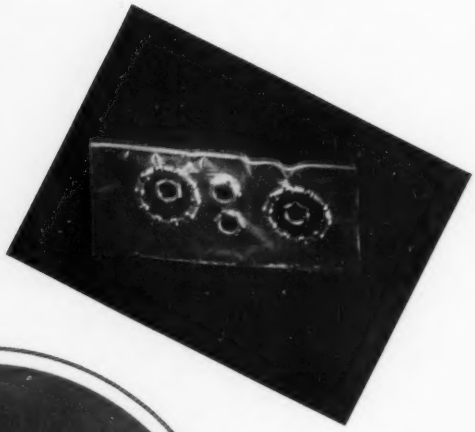
Wrappers of Alcoa Foil help guard this well-earned reputation. From dairy to consumer—in transit, in storage, in the home—nature's true freshness and flavor are insured by a sparkling pure aluminum sheathing.

If you have a packaging problem look into the many possible applications of Alcoa Foil. You may well find it the perfect answer for better protection, greater sales appeal for *your* product.

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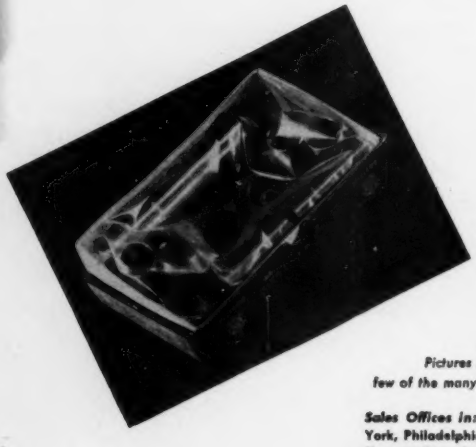


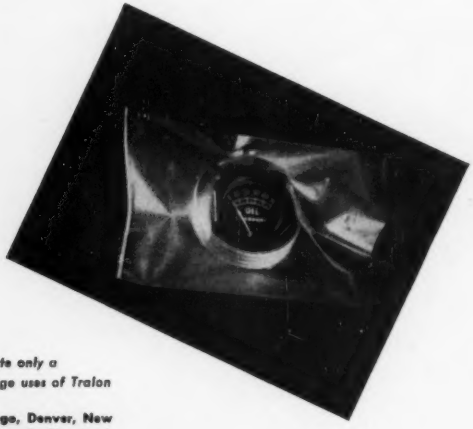


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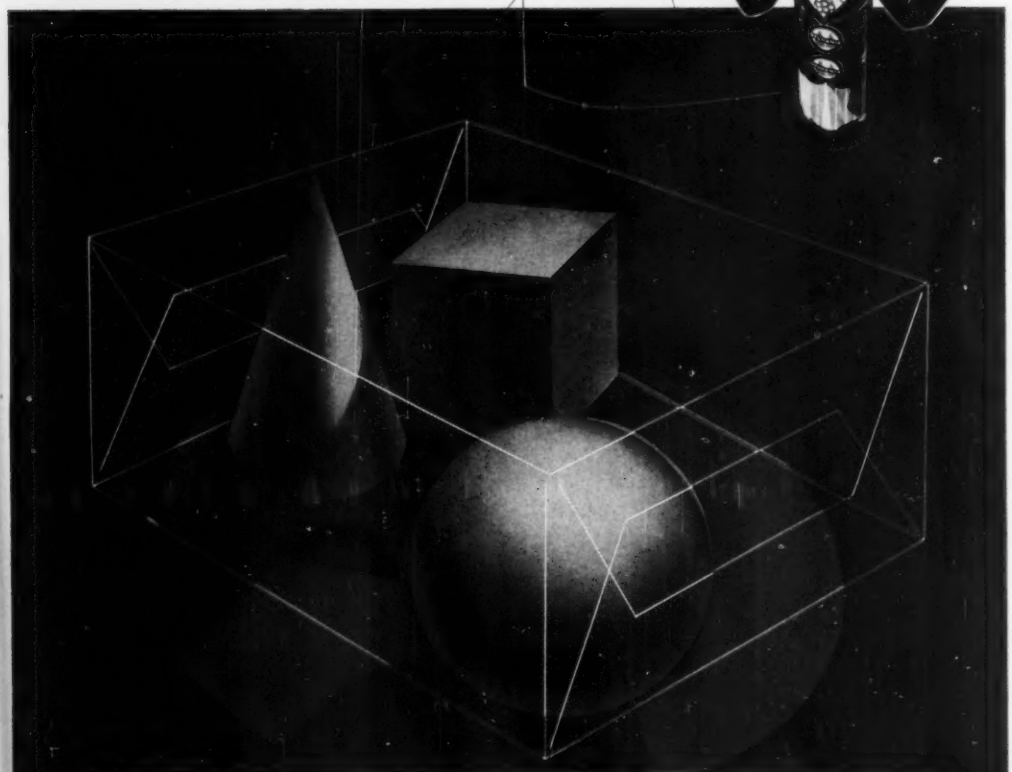


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throws new light on packaging design



Many a bright packaging idea would have died on the designer's board—were it not for economical Sylvania Cellophane. This versatile film naturally lends itself to sales-making ideas. That's because it's almost infinitely adaptable to every product's need. It comes with controlled moisture protection—in different gauges. It heat seals strongly and instantaneously either in hand-wrapping or on high speed automatic equipment. It can be economically printed on fast rotary presses with lustrous color effects.

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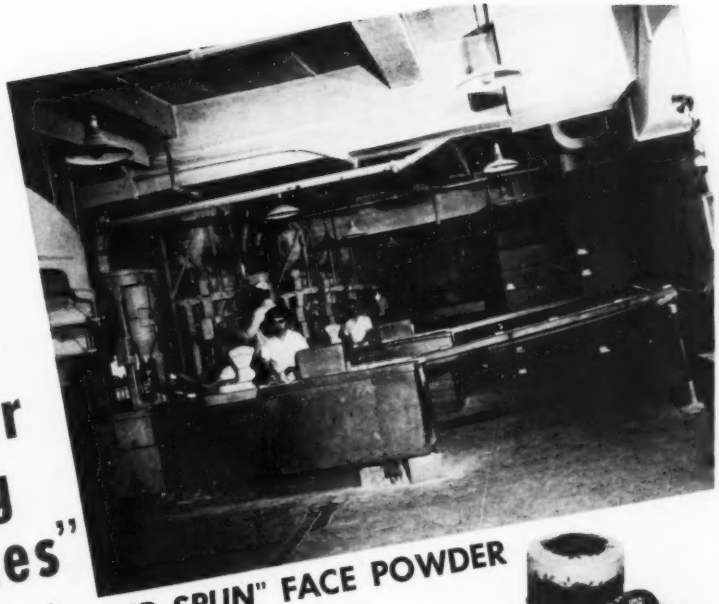
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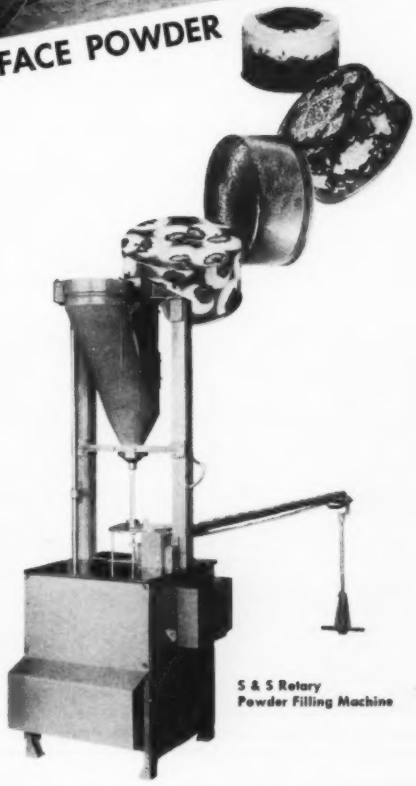
Coty "AIR-SPUN" FACE POWDER

These distinctive and most famous cosmetic packages of face powder by Coty were filled on S & S Rotary Powder Filling Machines. Requiring but one operator per machine, the container to be filled is placed on a rotary plate which carries the container to the filling auger. The container is then automatically filled . . . gently and without pressure. The filled container is then carried away on an outgoing conveyor, ready for sealing. Production is approximately 40 to 50 cosmetic packages per minute.

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S & S Rotary Powder Filling Machine

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DERMETICS, INC. • DEW
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unbreakable... can be squeezed, squashed, but not smashed.



controlled dispensing... spray, drop, or stream.



lightness... 1/5 the weight of glass empty; 1/2 filled.



new styling... package designers have new medium.



safety... everywhere with everyone across the room or continent.

Full assistance is available from Plax to help you apply the Plaxpak bottle to your product.

Other leading Plax products are annealed (for easier machining) methacrylate rod and Polyflex* polystyrene sheet — the strong, low cost transparent material that adds visually to product sales appeal.

Plax blow-molded products are made under the following U.S. patents: 2126239, 2175053, 2175054, 2230188, 2230198, 2260750, 2283751, 2349176, 2349177, 2349178.

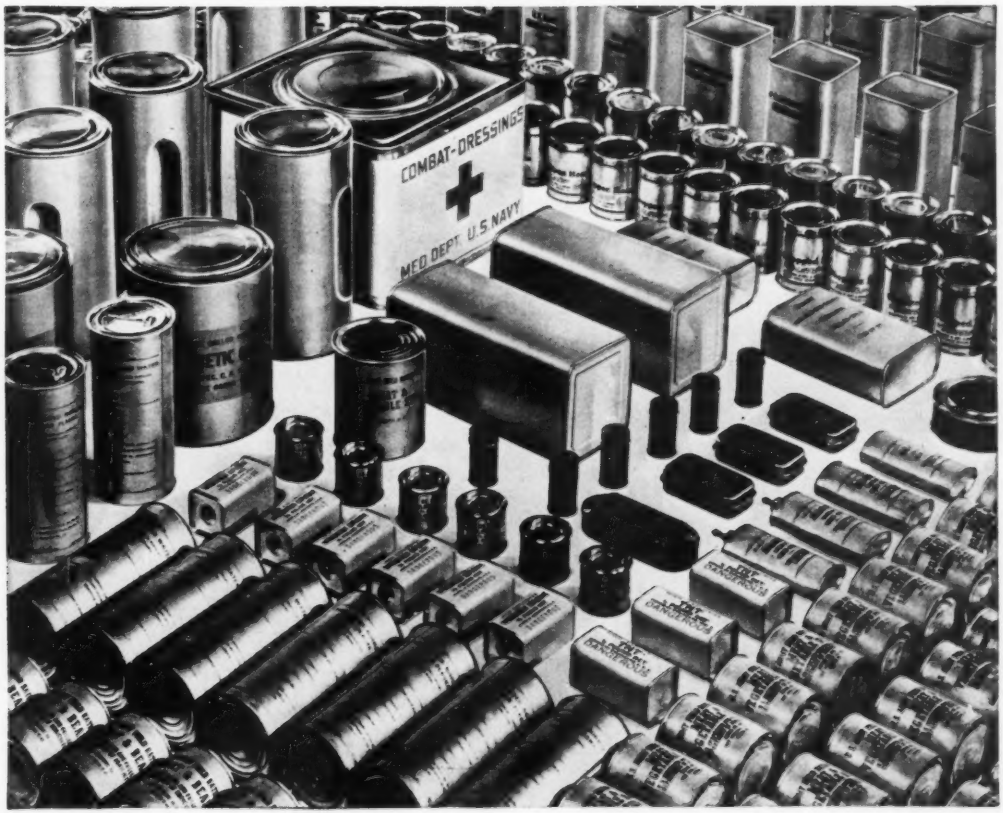
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CANCO

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New York · Chicago · San Francisco

SINCE the early 1900's we have been developing and building increasingly efficient closing machines and auxiliary and related equipment for lease to container users.

As of January 1, 1951, this entire line will be made available for sale as well as lease.

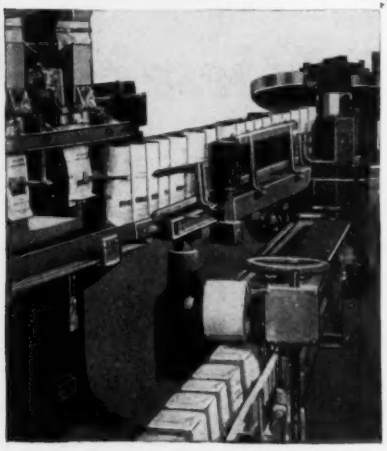
Details will be available shortly through our division offices in New York, Chicago and San Francisco.



THE BEMIS DELTASEAL BAG *PLUS* DELTASEAL PACKAGING EQUIPMENT

Equals

The most Economical, Efficient Package for Your Product



- Deltaseal® filling and closing is fast... mostly automatic... less handling.
- Deltaseal Bags have a neat, square, full-pack appearance... build easily into eye-catching displays.
- Crisp, brilliant Bemis printing on Deltaseals headlines your brand.
- Consumers like Deltaseal's exclusive Pull-Cut-Pour Spout.
- Bemis Packaging Specialists help you get the smoothest, most economical service from your Deltaseal System.

Ask the Bemis man for the complete Deltaseal story

"America's No. 1 Bag Maker"

Baltimore • Boise • Boston • Brooklyn • Buffalo • Charlotte • Chicago • Cleveland • Denver Detroit • East Pepperell • Houston • Indianapolis • Jacksonville, Fla. • Kansas City Los Angeles • Louisville • Memphis • Minneapolis • Mobile • New Orleans • New York City Norfolk • Oklahoma City • Omaha • Peoria • Phoenix • Pittsburgh • St. Louis • Salina Salt Lake City • San Francisco • Seattle • Vancouver, Wash. • Wichita • Wilmington, Calif.

Bemis



ELMER E. MILLS

Blown Plastic Bottles

The finest salesmen your products can have!



STOCK BOTTLES

- Lightweight—Unbreakable—Polyethylene available with or without "squeeze" features. Bottles are available in 2-4-6-8-ounce sizes.
- In clear plastic or wide range of colors.
- Stock atomizers with stream-spray or sprinkler features.
- Stock closures and tubing.

Since we make all of these parts, we can facilitate our service to you as a single source of supply.

For more information on our custom molding service, or for a free sample stock bottle, write us or our sales agent today.

SPECIAL BOTTLES

By combining skillful craftsmanship and sound engineering, we are producing specially blown thermoplastic bottles with or without "squeeze" features and in many shapes and sizes. This Helene Pessl "LITTLE LADY" and Manon Freres "PUPPY DOG" are typical examples. We also make closures and atomizers to your special needs.

Our bottles are manufactured under Patent number 2,515,093. Other patents are pending.

ELMER E. MILLS CORPORATION
2930 NORTH ASHLAND AVENUE • CHICAGO 13, ILLINOIS

Sales Agent for United States: W. BRAUN & CO. Chicago: 300 N. Canal St. **New York:** 595 Fifth Ave. **Detroit:** 139 W. Maple, Birmingham, Mich. **Los Angeles:** 6253 Hollywood Blvd.

Another practical example of Coated Lithwite versatility:*

Year-'round gift boxes with a luxury look...without a luxury price!



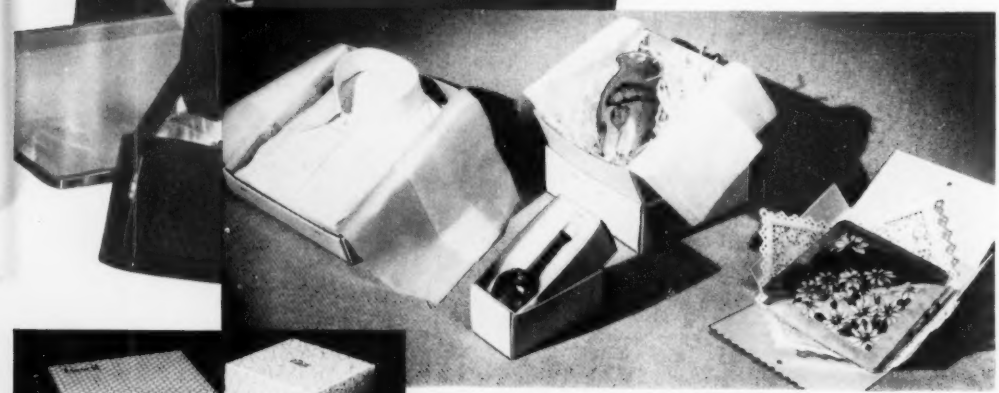
When a store's customer says, "Wrap it as a gift," she expects a gift box that says "quality" . . . that adds glamour to the gift inside.

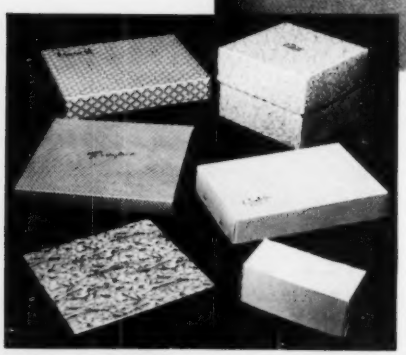
Problem for store owners: how to provide such boxes at a *practical* cost?

Gardner's answer, welcomed by many of the nation's leading retailers: *year-'round gift boxes of Coated Lithwite.*

For Cartons of *Coated* Lithwite have the luxury, "special occasion" look and feel that customers appreciate. Yet the revolutionary method by which Gardner produces *Coated* Lithwite makes this quality possible at a practical, "every-day" cost.

Available in a wide variety of sizes to accommodate any type of gift, from handkerchiefs and scarfs to umbrellas and blankets . . . these boxes ship flat, stack flat, save valuable storage space in stores. *Gardner Gift Boxes are stock items . . . another big advantage, when replacements are needed.*





Gardner Gift Boxes save time at the wrapping counter because they're designed to set up quickly, easily. And they're sturdy, too—sure to keep their smart good looks, even after rough handling by deliverymen.

THE GARDNER BOARD AND CARTON CO.

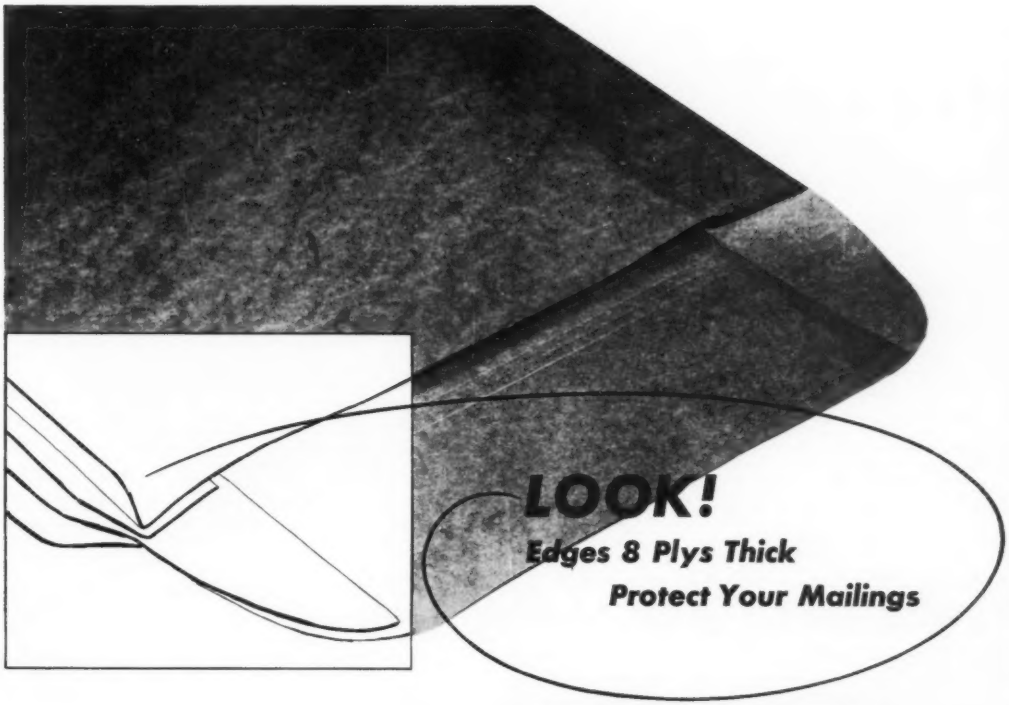
GIFTS COSTS . . . CUTS TIME on LCL and LTL orders

MANUFACTURERS OF FOLDING CARTONS AND BOXBOARD

408 Charles St., Middletown, Ohio

Sales Offices in Boston, Chicago, Cleveland, New York, Philadelphia, Pittsburgh, St. Louis

*Reg. U. S. Pat. Off.



ANDREWS
Armor-Edge Mailer

Eliminates nearly all mail damage losses

for magazines
for ad mats
for booklets and reports
for flat packages of every sort

Printed matter and merchandise shipped in Andrews Armor-Edge Mailers* are given positive damage protection by eight plys of heavy, glue-reinforced Kraft paper along the *two vital edges*. This superior protection is yours at a cost that compares favorably with other mailers which offer far less safety.

Developed originally to safeguard top-quality magazines, Armor-Edge Mailers find additional use wherever flat printed matter and merchandise needs insulation from the rigors of mailing.

Sizes and flap styles are designed to order. Why not ask for sample Armor-Edge Mailers. Then you'll be able to evaluate their merits yourself.



P. L. ANDREWS CORP.

1328 Broadway New York, N. Y.

* PATENT PENDING

Manufacturers of a complete envelope line for over 30 years



Packages

with that "Come Hither" look



You, too, may have a packaging problem, as did The Henkel-Clauss Company of Fremont, Ohio.

The problem was to *protect* and best *display* pinking shears and a set of three scissors.

We developed appealing plastic containers with beautiful, red bases and crystal-clear covers.

Each container is an individual display case. The contents are most attractively displayed yet protected—e.g., no marring of highly polished blades with fingerprints—and the shears and scissors are held securely in place . . . always ready for use to the delight of the user.

Whatever your product—if packaged—it will pay you to contact us and see what our experienced designers can suggest in *packages that sell.*



PLASTICS DIVISION

The VLCHEK TOOL COMPANY

3001 EAST 87th STREET • CLEVELAND 4, OHIO

POLYETHYLENE-ON-PAPER

...that's LOXOL

makes bags, bales, cartons, fiber drums, envelopes that are waterproof, greaseproof, fully protective

New avenues for more satisfactory packaging are opened by the revolutionary Loxol Process for *hot-melting* polyethylene to paper, board, cloth or other suitable carriers. The bond between the polyethylene and the carrier is really permanent . . . the material will not delaminate . . . pinholes are completely unknown.

Extra Strength, Low Cost

Loxol is unique in that the paper lends its strength to the polyethylene. For most applications, a thin layer of plastic gives full protection. Since only a minimum of polyethylene is used, costs are remarkably low.

Superior Moisture Control

Loxol has a very low MVTR and packages made of it effectively bar moisture exchange *between* the contents and the free atmosphere. Specific moisture levels can be maintained inside packages, and packages can be inhibited from acquiring additional moisture.

Many Other Advantages

Naturally, Loxol has many of the superiorities of polyethylene. It's odorless and tasteless. It's grease-proof and waterproof. It's flexible even at extremely low temperatures. And because the polyethylene is chemically inert, Loxol can be used to package caustics and other products that affect or combine with *ordinary* container materials. What's more, products that require the ultimate in freedom from contamination are safe with Loxol.

Special Varieties

Loxol Silver Chami-Pak consists of foil laminated to paper which has a hot-melt Loxol polyethylene coating. Its excellent characteristics suit it to tobacco and other specialty packaging. Loxol can be creped in one or two directions without developing mechanical failures. In creped form, it still has all of its protective qualities and will stretch and conform to various odd shapes.

Converters in all sections of the country are making multi-wall bags, fiber drums, folding cartons, envelopes, pouches, case liners and other packages that employ Loxol to provide maximum product protection at lowest cost. Write today, and we'll recommend a converter in your vicinity who can fill your requirements. Complete technical facilities are available. Don't delay. Ask for particulars now.



• Reg. T. M.

Every UNIT PACKAGING Service



Factory No. 1



Receiving Room



Package Control Laboratory



Special Air-Conditioned Room



Powder Packaging Room



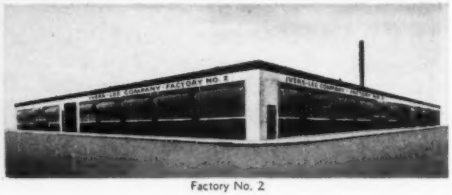
Sample Packaging



Package Assembly



Shipping Room



Factory No. 2

OURS is the finest contract unit packaging service in the world—the most diversified—the most complete. In our two superb plants of 125,000 square feet we have every labor-saving device. Everything moves by motor-driven conveyors or motor skid carriers. Boxes and punchboards are formed by automatic carton-folding machines—boxes are sealed by automatic taping machines or cellophane wrapped by automatic overwrap machines.

One of the secrets of our efficiency and economy is a battery of NEW high speed tablet unit packaging machines and fifteen other different types of machines to make every kind of unit package. Over one hundred unit packaging machines are at your service. If you require a unit package for tablet—capsule—cream or powder, we make the right package for your use. Among our creations are the multi-unit sale package—the strip dispensing package—the punchboard mailer—the booklet package—the catchcover package—the identity tab package—and the I.L. miniature package.

With us as your packaging department you have no problems of equipment, production, or rush delivery. The experience, dependability and know-how of thirty years make available to you the finest packages in the world at less cost at

UNIT PACKAGING HEADQUARTERS

SANITAPE SEALTITE

IVERS-LEE COMPANY • NEWARK, NEW JERSEY

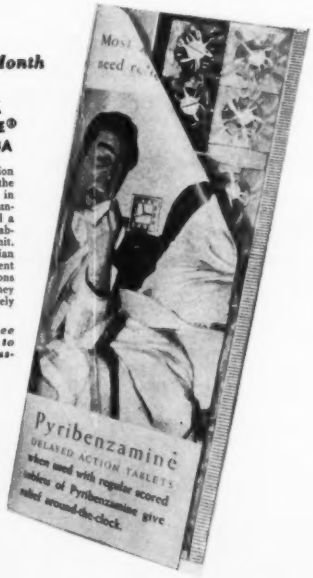
Sanitape-Sealtite is a unique method of packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own airtight compartment surrounded by a crimp flange assuring complete protection and maintained efficacy. Packages, machines and methods covered by U. S. and foreign patents and patents pending. Available only through the Ivers-Lee Packaging Service. Infringing imitators will be subject to legal prosecution.

Package of the Month

PROFESSIONAL PYRIBENZAMINE® SAMPLE BY CIBA

To assure safe medication and convenience to the patient, Ciba combines in this unique package an uncoated action tablet and a coated delayed-action tablet both in the same unit. The folder to the physician contains 4 separate patient samples with instructions but without identity. They can be removed separately along perforated lines.

Another Ivers-Lee Package Creation to solve a Special Customer Problem.



TRANSPARENT PACKAGES

Reveal

DON'T

Conceal



SHOW YOUR PRODUCT

Transparent boxes — all sizes, all shapes produced by one of Pennsylvania's largest manufacturers of rigid transparent (acetate) containers.

Set-up paper boxes — fine hand-made and high-speed machine wrapped — assure a complete packaging service.

Let us help increase your sales —
our designing department is at your service.

ESTABLISHED OVER 50 YEARS

NEW YORK OFFICE
130 West 42nd Street New York City, N. Y.
Chickering 4-8678

SAMUEL
BARNETT
COMPANY

22nd Street and Lehigh Avenue
Philadelphia, Pa.


SERVICE . . .
The Very Best . . . On Every Order.
Folding Cartons . . .
plain, printed, laminated, paraffined.
CHICAGO CARTON COMPANY
CHICAGO CARTON COMPANY • 4200 SOUTH CRAWFORD AVENUE • CHICAGO 32, ILLINOIS

INCREASE SALES PACKAGE PROMOTIONALLY!

FEDERAL *Practical* **HOUSEWARES**

630—SUGAR SERVER
Can be packed with jellies, jams, condiments, etc., and re-used for sugar server. 13 oz. capacity.



810—COCKTAIL SHAKER
Can be packed with hard candies and re-used for proper mixing of all drinks. 32 oz. capacity.



428—NO DRIP SERVER
A new type, inexpensive server, for honey. Plastic top. 13 oz.



137—NO DRIP SERVETTE
Plastic top. Use for honey, syrup, cream salad dressing, etc. Easy to keep clean. 11 oz. capacity.



453—TWIN-SERVER SET
For jellies, jams, marmalade, horse radish, mustard, catsup, chili sauce. Colorful, inexpensive and ideal for kitchen and breakfast nook. 6 oz. capacity each.



Here's just a sample of the many packaging products FEDERAL HOUSEWARES offer you for your particular product

REPLACEMENT OR A REFUND OF MONEY
Guaranteed by Good Housekeeping
IF NOT AS ADVERTISED THEREIN

430—1½ Qt. NO DRIP SERVER
Use as a fruit or vegetable juice server (holds economy size (46 oz.) can of juice. Stores easily in refrigerator for ready use). Ideal for batters, cocktail shaker, milk, hot chocolate, ice water (slide holds back ice cubes). 48 oz. capacity.





465—OIL & VINEGAR SET
Ideal for oil and vinegar as well as honey, syrup, cream, catsup, salad dressing, condiments, etc. 7 oz. capacity each.

427—NO DRIP SERVER
Dispenser for syrup, honey, cream, salad dressing, sugar, etc. 13 oz. capacity. Plastic top. Metal slide. Also available in 7-11-32-48 oz. capacity.





467—"3-WAY" SALT & PEPPER SET
Can be packed with jellies and re-used for salt and pepper shakers. 7 oz. capacity each.

631—SUGAR METER
Has the same uses as the sugar server but has added feature of releasing ½ teaspoon at a time. Capacity 13 oz.



Put the Accent on Repeat Sales With Re-usable Containers!

Good old down-to-earth hard selling is what FEDERAL HOUSEWARES do for you when you package your product in these re-usable containers.

They do a multiple job of impulse selling for you. Customers see the quality of your product . . . they see the re-use value of the container . . . and most of all . . . they see the value of the tie-in sale which actually gives them triple value for their money.

. . . and Don't Forget This:

Your label is on the re-usable container and serves as a "home" point-of-sale reminder for a re-fill which means repeat sales for you!

If you have a specific product to be packaged and do not see it here, or if you need a specially designed container for your product, write for a complete catalog and further details TODAY!

***FEDERAL** also has functional caps to fit 43, 53 or 70 mm openings.*

Vinylite sealing liners available on request.

FEDERAL TOOL CORP.
3600 WEST PRATT BOULEVARD · CHICAGO 45, ILLINOIS

Oxford Papers



and

Oxford Merchants



HELP BUILD SALES

IF YOU JUDGE printed selling by results—in terms of more sales—you'll find Oxford Papers a sound selection for printing by letterpress, offset, lithography or rotogravure.

For this there are two reasons . . .

1. Each Oxford coated or uncoated grade has a performance record which proves how effectively it has been designed for its particular job.

2. The services of your Oxford Paper Merchant bring an added advantage when you use these fine papers. This is his first-hand knowledge of paper, and seasoned experience with printing problems.

Get in touch with the nearest one today, and see for yourself why Oxford Papers and your Oxford Merchant make an ideal combination.

OXFORD PAPER COMPANY *230 Park Avenue, New York 17, N. Y.*

OXFORD MIAMI PAPER COMPANY *35 East Wacker Drive, Chicago 1, Ill.*

MILLS AT RUMFORD, MAINE, AND WEST CARROLLTON, OHIO

Nation-wide Service Through Oxford Paper Merchants

Albany, N. Y.	W. H. Smith Paper Corp.
Atlanta, Ga.	Wyant & Sons Paper Co.
Augusta, Maine	Carter, Rice & Co. Corp.
Baltimore, Md.	The Mudge Paper Co.
Bethlehem, Pa.	Wilcox-Walter-Furlong Paper Co.
Boise, Idaho	Blake, Moffitt & Towne
Boston, Mass.	Carter, Rice & Co. Corp.
Buffalo, N. Y.	Franklin-Cowan Paper Co.
Charlotte, N. C.	Caskie Paper Co., Inc. The Charlotte Paper Co.
Chattanooga, Tenn.	Bond-Sanders Paper Co.
Chicago, Ill.	Bermingham & Prosser Co. Bradner, Smith & Co. The Whitaker Paper Co.
Cincinnati, Ohio	The Johnston Paper Co. The Whitaker Paper Co.
Cleveland, Ohio	The Cleveland Paper Co.
Columbus, Ohio	Scioto Paper Co.
Dayton, Ohio	Cincinnati Cordage Co. The Whitaker Paper Co.
Des Moines, Iowa	Bermingham & Prosser Co.
Detroit, Mich.	Chope Stevens Paper Co.
Fresno, Calif.	Blake, Moffitt & Towne
Hartford, Conn.	Green & Low Paper Co., Inc.
Indianapolis, Ind.	MacCollum Paper Co.
Jacksonville, Fla.	Jacksonville Paper Co.
Kalamazoo, Mich.	Bermingham & Prosser Co.
Kansas City, Mo.	Bermingham & Prosser Co.
Knoxville, Tenn.	Louisville Paper Co.
Lincoln, Neb.	Western Newspaper Union
Little Rock, Ark.	Roach Paper Co.
Long Beach, Calif.	Blake, Moffitt & Towne
Los Angeles, Calif.	Blake, Moffitt & Towne
Louisville, Ky.	Louisville Paper Co.
Lynchburg, Va.	Caskie Paper Co., Inc.
Manchester, N. H.	C. H. Robinson Co.
Memphis, Tenn.	Louisville Paper Co.
Miami, Fla.	Everglades Paper Co.
Milwaukee, Wis.	Allman-Christiansen Paper Co. Sensenbrenner Paper Co.
Minneapolis, Minn.	Wilcox-Mosher-Leffholm Co.
Nashville, Tenn.	Bond-Sanders Paper Co.
Newark, N. J.	Bulkley, Dunton & Co., Inc.
New Haven, Conn.	Bulkley, Dunton & Co., Inc.
New York, N. Y.	Baldwin Paper Co., Inc. Bulkley, Dunton & Co., Inc. Green & Low Paper Co., Inc. Miller & Wright Paper Co. The Whitaker Paper Co.
Oakland, Calif.	Blake, Moffitt & Towne
Omaha, Neb.	Western Paper Co.
Philadelphia, Pa.	Atlantic Paper Co. Wilcox-Walter-Furlong Paper Co.
Phoenix, Ariz.	Blake, Moffitt & Towne
Pittsburgh, Pa.	General Paper Corp. Brubaker Paper Co.
Portland, Maine	C. H. Robinson Co.
Portland, Ore.	Blake, Moffitt & Towne
Providence, R. I.	Carter, Rice & Co. Corp.
Richmond, Va.	Cauthorne Paper Co.
Rochester, N. Y.	Genesee Valley Paper Co.
Sacramento, Calif.	Blake, Moffitt & Towne
St. Louis, Mo.	Shaughnessy-Kniep-Hawe Paper Co. Tobey Fine Papers, Inc.
St. Paul, Minn.	Inter-City Paper Co.
San Bernardino, Calif.	Blake, Moffitt & Towne
Salt Lake City, Utah	Western Newspaper Union
San Diego, Calif.	Blake, Moffitt & Towne
San Francisco, Calif.	Blake, Moffitt & Towne
San Jose, Calif.	Blake, Moffitt & Towne
Seattle, Wash.	Blake, Moffitt & Towne
Sioux City, Iowa	Western Newspaper Union
Spokane, Wash.	Blake, Moffitt & Towne
Springfield, Mass.	Bulkley, Dunton & Co., Inc. *(Div. of Carter, Rice & Co. Corp.)* Mill Brand Papers, Inc.
Stockton, Calif.	Blake, Moffitt & Towne
Tacoma, Wash.	Blake, Moffitt & Towne
Tampa, Fla.	Tampa Paper Co.
Toledo, Ohio	Paper Merchants, Inc.
Tucson, Ariz.	Blake, Moffitt & Towne
Washington, D. C.	The Mudge Paper Co.
Worcester, Mass.	C. A. Esty Paper Co. *(Div. of Carter, Rice & Co. Corp.)*



Handsome because Handsome Does

When Milady buys her cigarettes she scarcely sees the Aluminum Foil inner wrap—she just "knows it's there." She's known for many years that all leading brands are foil-protected—so she's confident of quality . . . confident that original fineness is protected until she breaks the seal.

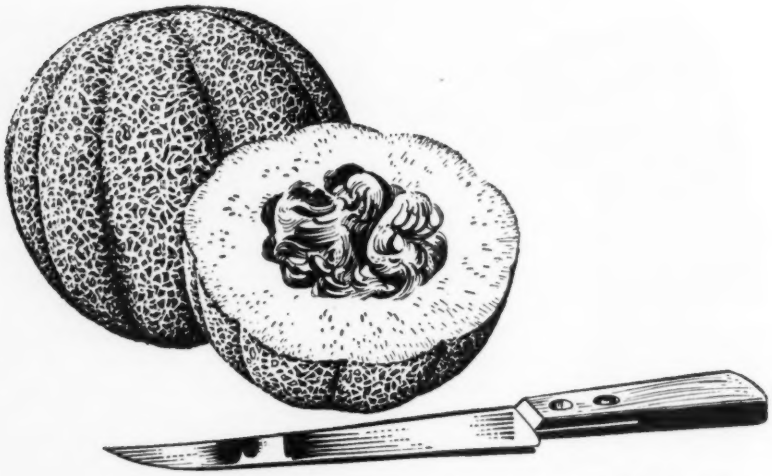
Besides such *inherent* "Beauty at Work" in fine tobaccos, Cochran's Pure Aluminum Foil has a myriad of other packaging uses. Some are for shelf appeal—beauty alone. Some are for protection only. Many combine both—so that the beautiful package is also the best protection for the quality of the contents.

Maybe your product needs Cochran's "Beauty at Work". We will be happy to refer your inquiries to qualified package manufacturers for a comprehensive study of your requirements.

Cochran

COCHRAN FOIL COMPANY
INCORPORATED
LOUISVILLE 10, KENTUCKY

SALES OFFICES:
714 Wrigley Bldg., Chicago 11, Illinois • 3318 East Lake Street, Minneapolis 6, Minn. • 632 Fisher Building, Detroit 2, Michigan • 500 Fifth Avenue, New York 18, N. Y. • 238 West Wisconsin Ave., Milwaukee 3, Wisconsin • Hippodrome Bldg., Cleveland 15, Ohio



Nature does it Well...

West Carrollton GENUINE VEGETABLE Parchment *does it Better!*

Natural flavor is protected by nature for a short time only. West Carrollton Genuine Vegetable Parchment protects foods as long as necessary. It is ODORLESS, TASTELESS, GREASE RESISTANT and INSOLUBLE. Complete facilities in our own plant for printing in one or more attractive colors (*with special inks.*)

DRY WAXED PARCHMENT
BUTTER WRAPPERS
BUTTER TUB LINERS & CIRCLES
BUTTER BOX LINERS

★

LARD CARTON LINERS
MILK & ICE CREAM CAN TOPS
SLICED BACON WRAPPERS
OLEOMARGARINE WRAPPERS

★

VEGETABLE SHORTENING CARTON LINERS
CELERY WRAPPERS
FISH FILLET WRAPPERS & INSERTS
MEAT WRAPPERS

★

LINERS FOR MEAT TINS
POULTRY WRAPPERS
CHEESE WRAPPERS
TAMALE WRAPPERS
MANY OTHERS

WEST CARROLLTON PARCHMENT COMPANY • WEST CARROLLTON, OHIO



For over 50 years

discriminating manufacturers

have been building sales

of products which are packaged

in Rowell Containers.

Expert craftsmanship.

Magnificent color printing.

Prompt deliveries.

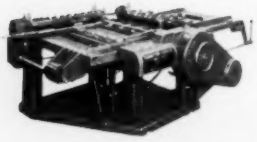
E. N. Rowell Co. Inc.
Manufacturers of Fine Paper Boxes
BATAVIA, N.Y.

from SLITTER
to TESTER

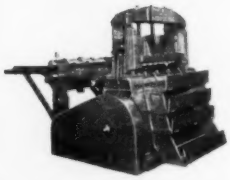
there's now a *Hamilton-Kruse*

automatic high-speed machine

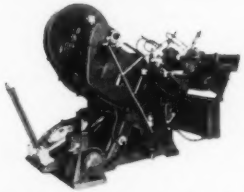
FOR EVERY STEP IN YOUR CAN-MAKING LINE



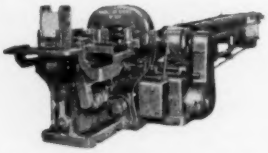
Gang Slitter trims and slits sheets up to 36" trimmed width. Available for decorated sheets. Also as duplex body blank slitter or trimmer and slitter. Operates at a high rate of speed.



Scroll Shear saves 4% to 7% in tinplate required for can ends, bottle caps, etc. Handles sheets up to 36" square at a high rate of speed.



Strip Feed Press has a rating of 25 tons, handles 36" strip and takes single, double or multiple dies. With single curler, handles 300 or more ends a minute — with double curler, twice this.



Bodymaker for 2-1/16" to 4¼" dia. sanitary cans. Fully automatic, it operates at 300 cans and up per min. Solder attachment optional. Others available for diameters to 10½", for square, rectangular, or oval bodies, with plain or "Mennen-type" side seam and with or without beading.



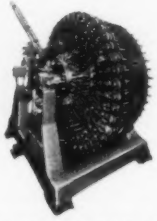
Can Body Flanger will take cans from 2" to 4¼" diameters at speeds equivalent to bodymaker's output. Available, too, for smaller and for larger cans, and for square and rectangular cans. Can be had in connection with beader for general line. Separate beaders also available for general line or for sanitary cans.



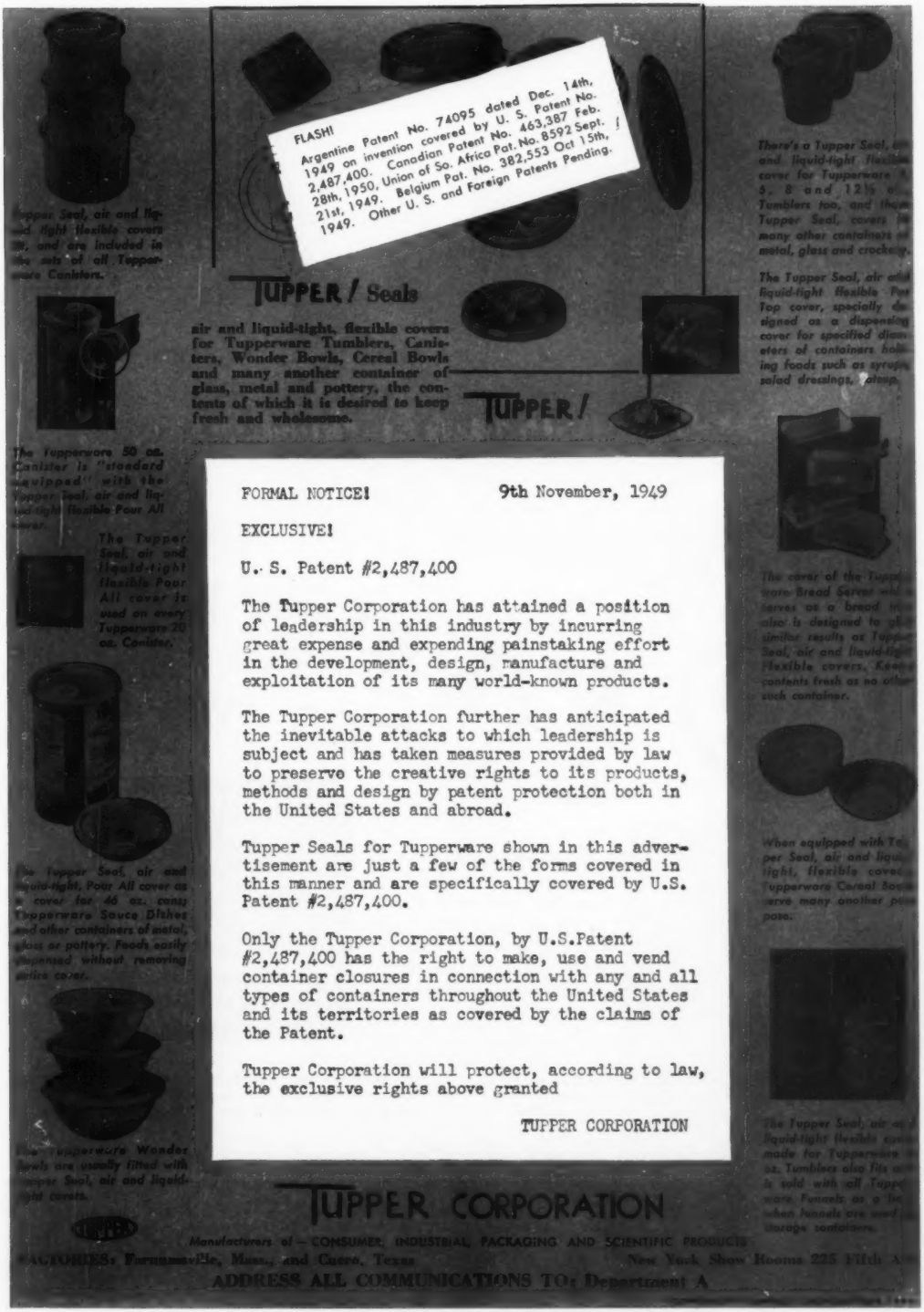
Double Seamer will handle 2-1/16" to 4¼" diameter cans at speeds of 300 or more per minute. Available; also, for larger cans, up to 30-lb. egg size, and for square, rectangular and oval cans up to two-gallon size.

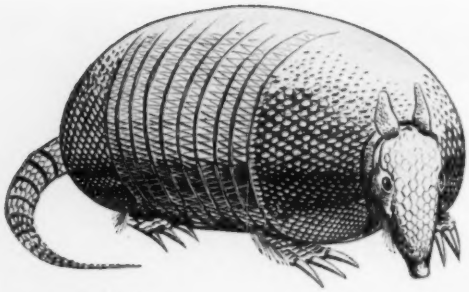
For full information and specifications on any of these automatic machines, write or call Mr. Roland H. Johnson, Sales Manager of the Can Machinery Dept., Lima-Hamilton Corporation at 60 East 42nd St., New York 17, N. Y., or call the Chicago Sales Office at 400 West Madison Street, Chicago 6, Ill., or write directly to the Lima-Hamilton Corporation, Hamilton, Ohio.

LIMA HAMILTON CORPORATION



Tester is 44-pocket machine that will take 1¾" to 4¼" diameter cans at better than 300 a minute. A 22-pocket machine will automatically test cans up to 7¾" dia. by 12" length.

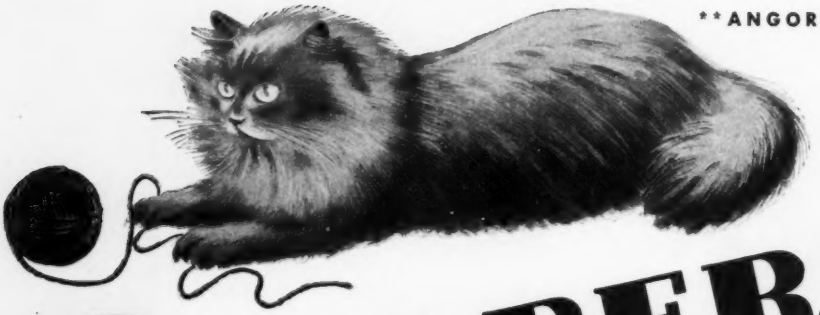

FLASH!
Argentine Patent No. 74095 dated Dec. 14th, 1949 on invention covered by U. S. Patent No. 2,487,400. Canadian Patent No. 463,387 Feb. 28th, 1950, Union of So. Africa Pat. No. 8592 Sept. 21st, 1949. Belgium Pat. No. 382,553 Oct 15th, 1949. Other U. S. and Foreign Patents Pending.
TUPPER / Seals
air and liquid-tight, flexible covers for Tupperware Tumblers, Canisters, Wonder Bowls, Cereal Bowls and many another container of glass, metal and pottery, the contents of which it is desired to keep fresh and wholesome.
TUPPER /
FORMAL NOTICE! 9th November, 1949
EXCLUSIVE!
U. S. Patent #2,487,400
The Tupper Corporation has attained a position of leadership in this industry by incurring great expense and expending painstaking effort in the development, design, manufacture and exploitation of its many world-known products.
The Tupper Corporation further has anticipated the inevitable attacks to which leadership is subject and has taken measures provided by law to preserve the creative rights to its products, methods and design by patent protection both in the United States and abroad.
Tupper Seals for Tupperware shown in this advertisement are just a few of the forms covered in this manner and are specifically covered by U.S. Patent #2,487,400.
Only the Tupper Corporation, by U.S.Patent #2,487,400 has the right to make, use and vend container closures in connection with any and all types of containers throughout the United States and its territories as covered by the claims of the Patent.
Tupper Corporation will protect, according to law, the exclusive rights above granted
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MIXING WITH THE ARISTOCRATS

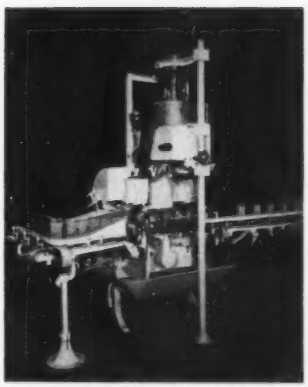


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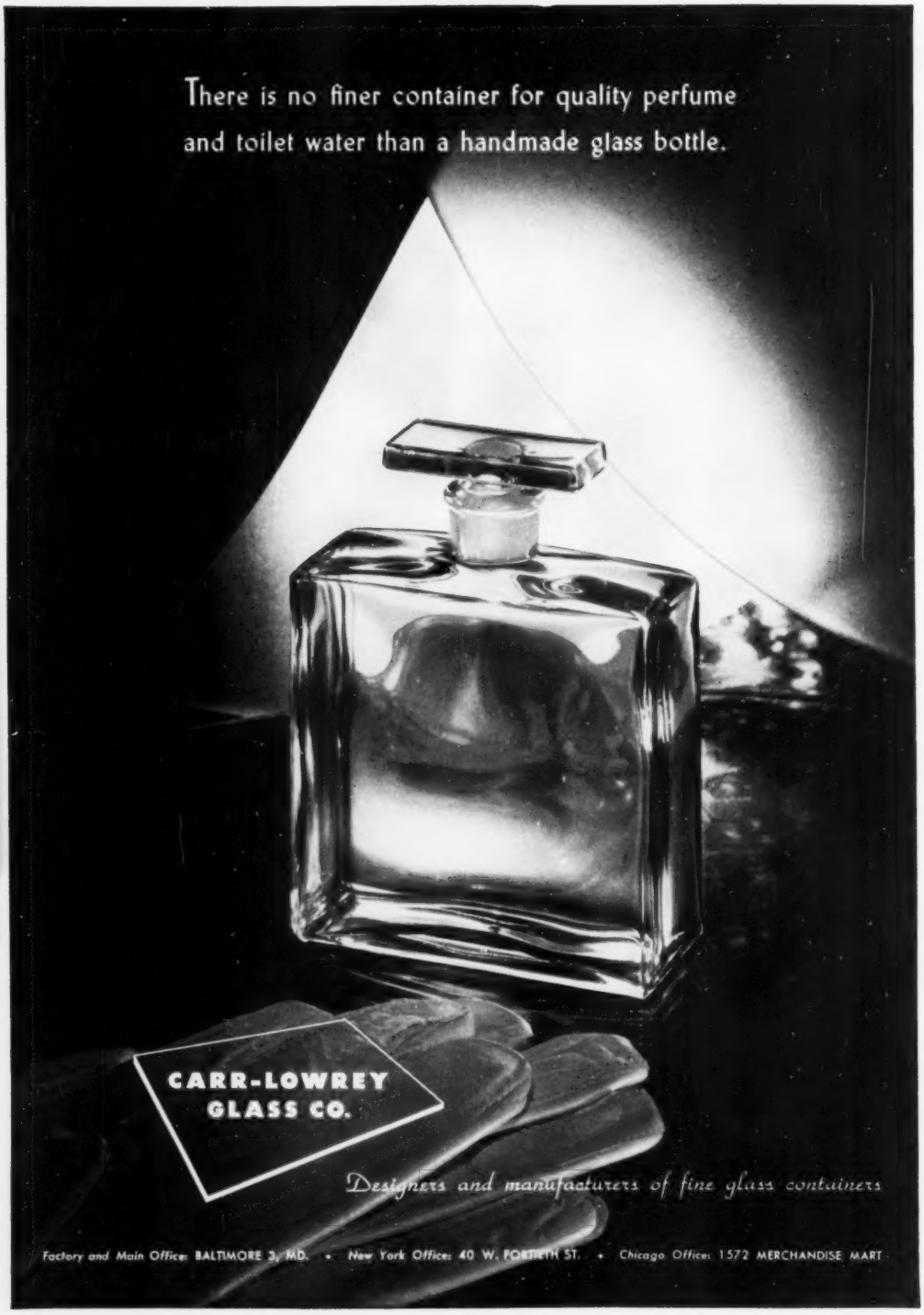


Jean Jacques Rousseau on education for citizenship

There can be no patriotism without liberty, no liberty without virtue, no virtue without citizens; create citizens, and you have everything you need; without them, you will have nothing but debased slaves, from the rulers of the State downwards. To form citizens is not the work of a day; and in order to have men it is necessary to educate them when they are children.



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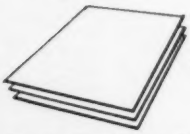
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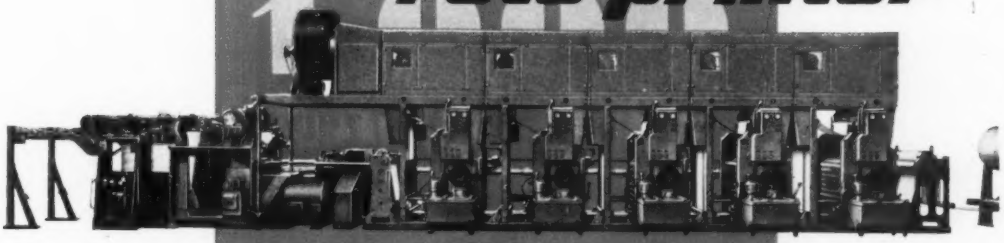


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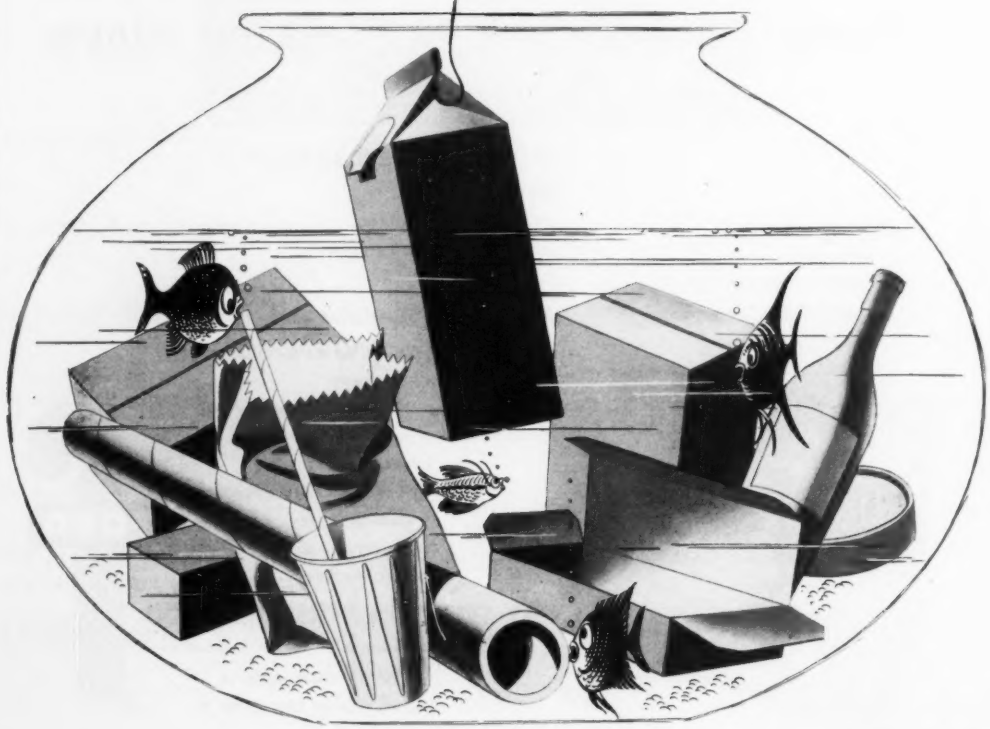
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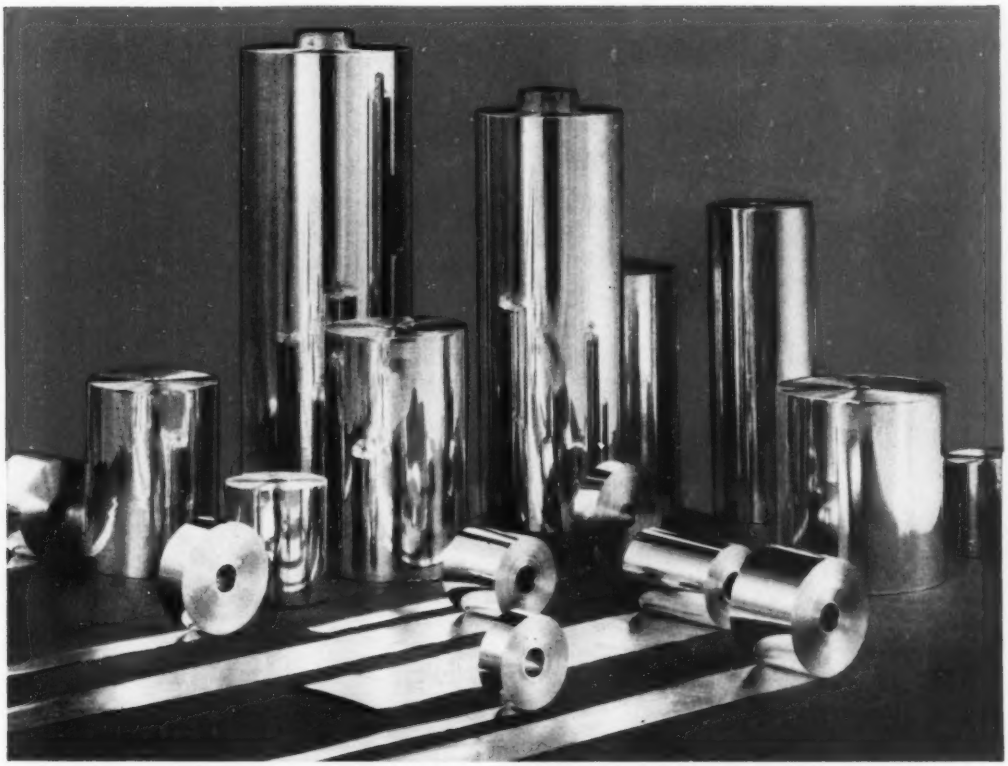
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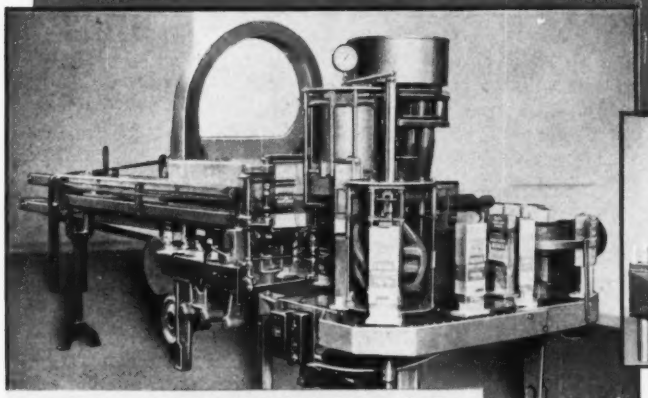
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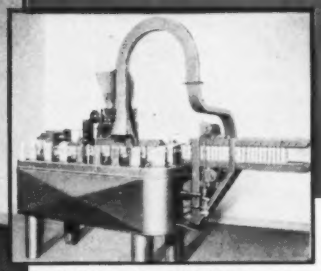
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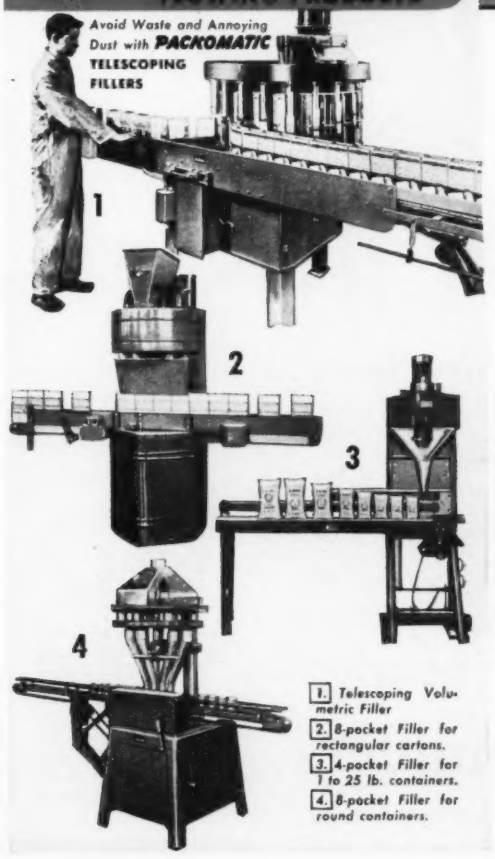
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OUNCES TO POUNDS — standard containers or individual serving or sample packages, formed, filled and sealed automatically with PACKOMATIC top and bottom carton sealers and volumetric fillers. Standard model left; miniature model above.

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2. *8-pocket Filler for rectangular cartons.*
3. *4-pocket Filler for 1 to 25 lb. containers.*
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PACKOMATIC *automatic* packaging equipment includes:

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- Case Gluers-Sealers
- Case Imprinters
- Carton Fillers-Sealers
- Volumetric Fillers
- Carton Making Machines
- Dating (Coding) Devices
- Paper Can Tube Equipment

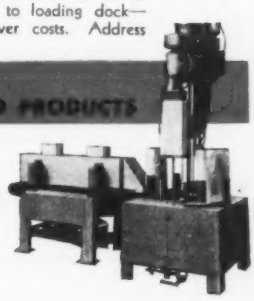
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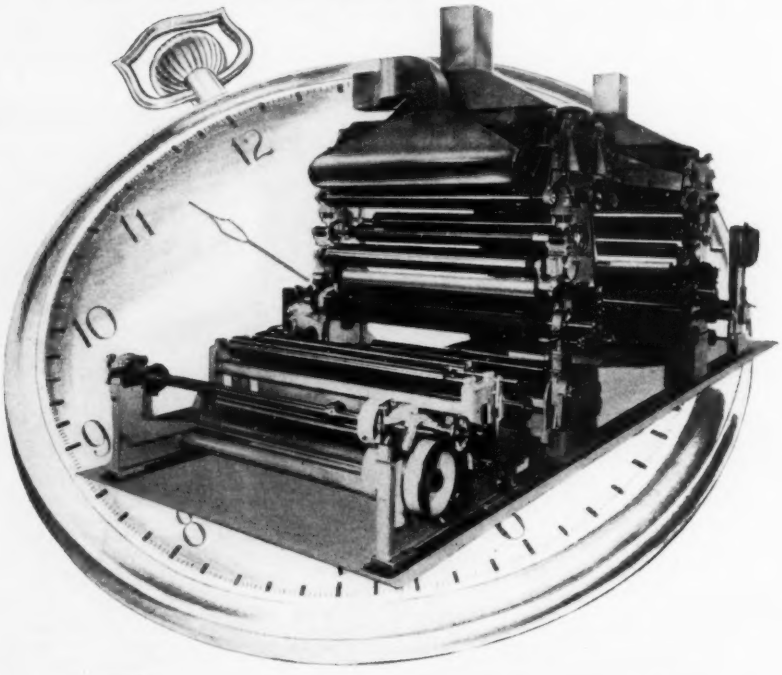
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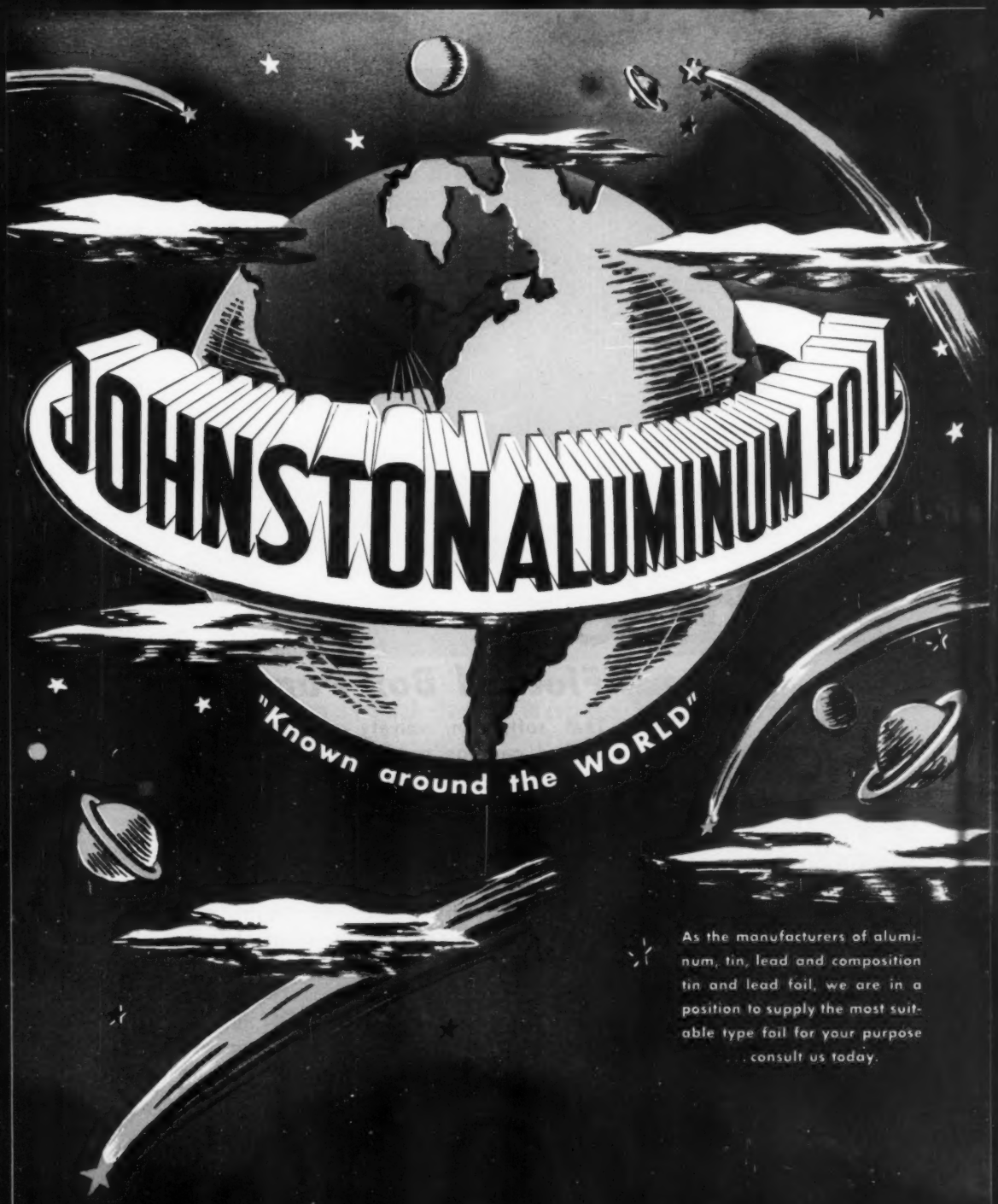
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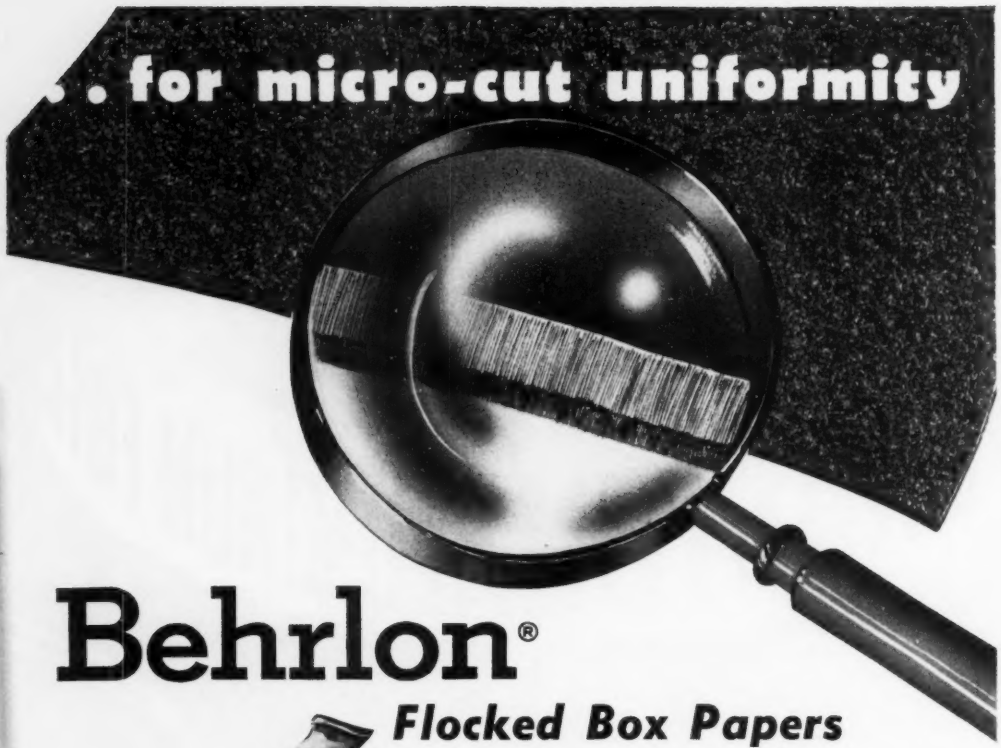


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Makers of NORZON® Electro-coated Pile Fabrics



they're molded from Koppers Polystyrene

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gives you all these advantages

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Here's why. With National Can, you draw upon all the skill and experience gained in nearly fifty years of metal container fabrication and processing. Equally important, you have at your command a complete and closely co-operating lithography service — thoroughly equipped to act on such sales-influencing considerations as color selection, composition of illustrations, photography, and container design.

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Does your Package *Successfully* Introduce your Sales Idea?



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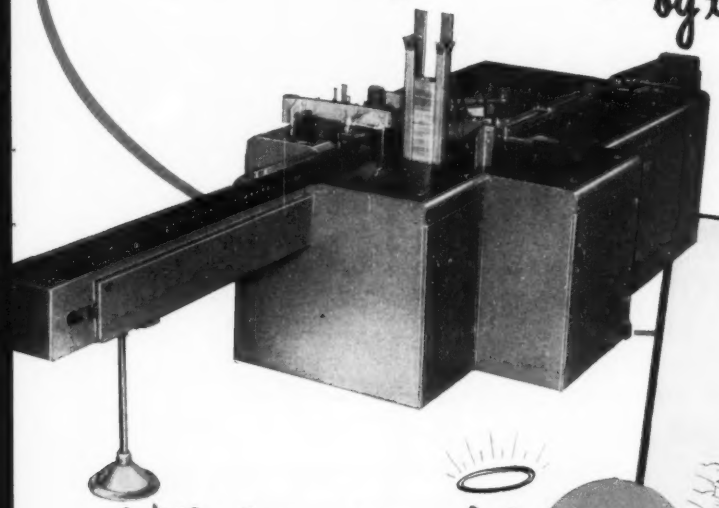
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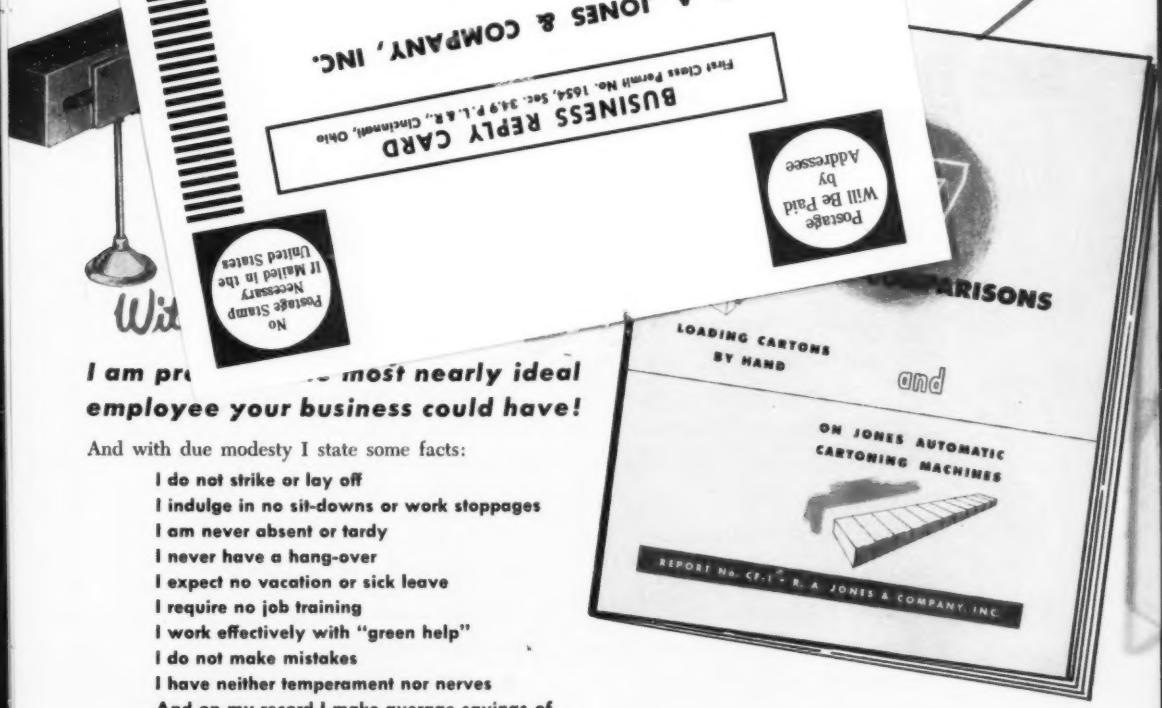
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"Hear my Story as I tell it!"

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I am pr… most nearly ideal employee your business could have!

And with due modesty I state some facts:

I do not strike or lay off
I indulge in no sit-downs or work stoppages
I am never absent or tardy
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I expect no vacation or sick leave
I require no job training
I work effectively with "green help"
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I have neither temperament nor nerves
And on my record I make average savings of from $36.33 to $189.40 per day.

Of the countless jobs on which I am working, 97 have been studied to record my speed and ability to handle every type of carton loading operation, from the simplest load to complicated multiple-piece loads. This report is available in a booklet – a facts-and-figures record, without selling talk. It should be very interesting and helpful to any business which has problems with the "human factor" in carton loading.

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That comfortable feeling of *knowing* your adhesives are on the job *after* production is yours the day you standardize with STAR BRAND ADHESIVES.

Ceaseless research, finest raw materials and careful compounding put into every Star Brand Adhesive the reliability that means *results* . . . flawless, dependable results for each of your packaging operations calling for an adhesive.

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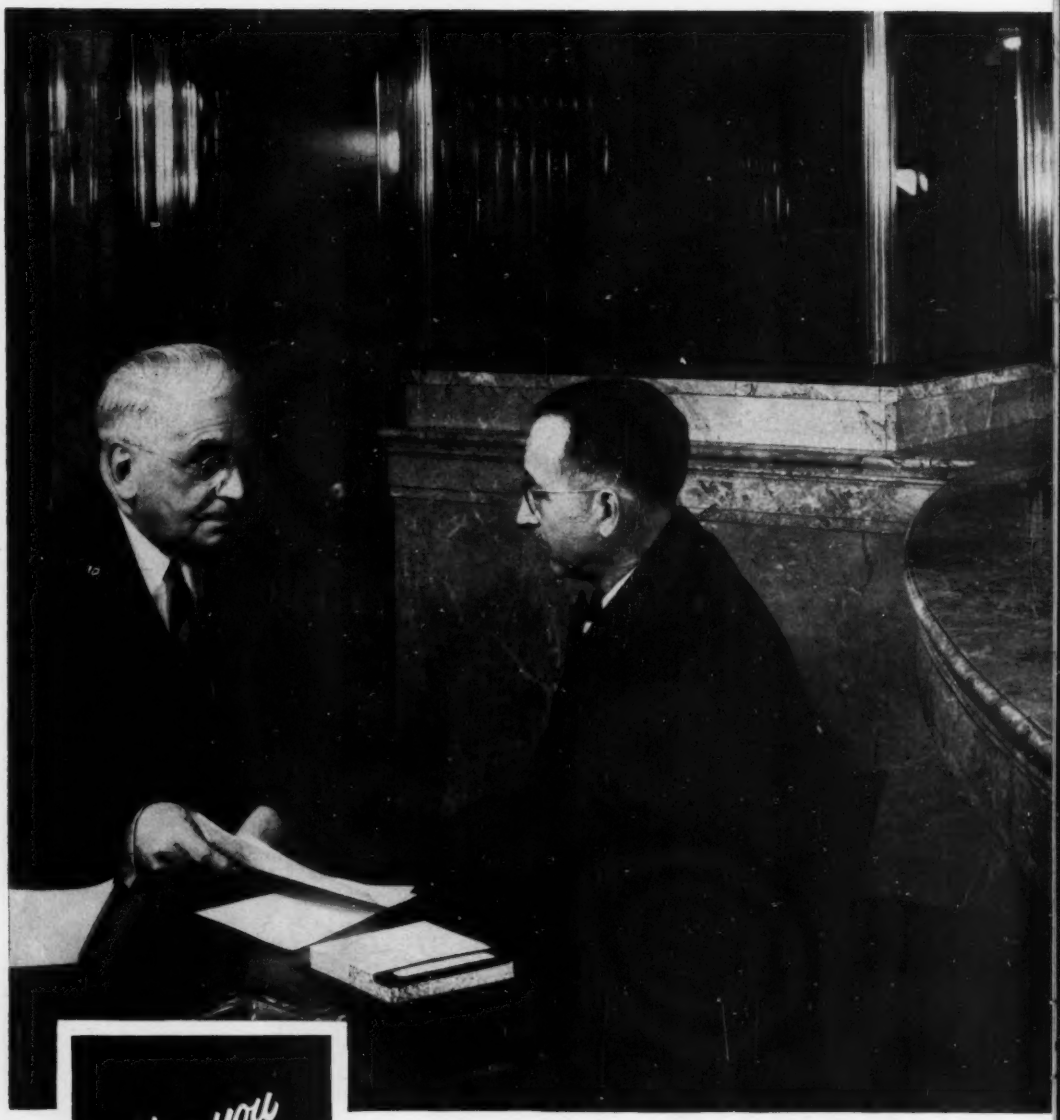
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CANS THAT PROTECT...
CANS THAT BUILD
Repeat Business

FOR almost fifty years, Heekin experts in package design have helped thousands of manufacturers who send their merchandise to market in a metal can. Today, with super markets growing, impulse buying demands more attention be given to appearance and styling. May we discuss this with you?



HEEKIN
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THE HEEKIN CAN CO. CINCINNATI 2, OHIO



When you want the BEST go to the BEST

And for Packaging it's GLASS

The transparent glass package displays your products with all their colorful eye and appetite appeal. High in chemical durability, it does not change their taste or aroma, will not rust, corrode or leak.
Easy to open, easy to use, easy to reseal to protect unused portions, it makes the most convenient package. It lends itself to individuality in size and shape, hence is adaptable to any product.
Preferred by consumers because it is sanitary and convenient . . . by retailers because of its sales and merchandising advantages.
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Anchorglass*

TUMBLERS

Jellies, jams and preserves lend themselves to tumbler packaging . . particularly in strong, well designed *Anchorglass* Tumblers. They are the result of consistency in manufacture, uniform distribution of glass, proper annealing and strict quality control from selection of raw materials to finished products. A number of popular styles and capacities are available, one or more of which, we feel sure, will fit your packaging needs. But regardless of what you package there are *Anchorglass* Containers in styles, capacities and colors that will meet your requirements.

ANCHORVAC*

T CAPS

Anchorvac T Caps are used for sealing either thin blown or thin pressed tumblers having straight, flared or bead finish sides. They are suitable for vacuum sealing, hot packing and for sterilization or processing after sealing. Their loose fit before sealing permits speed in application and drawing of vacuum. *Anchorvac* T Caps can be applied with *Anchor* Sealing Machines at speeds ranging from 20 to 125 per minute. They are available in 8 sizes ranging from 54 to 77 mm. Let us tell you more about *Anchorglass* Tumblers and *Anchorvac* T Caps.

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CECO

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Adjustable Carton Sealer Produces Improved, Pilfer-proof Packages for TRITZELS



CECO Seals Cartons Square for Perfect Display Stacking

By replacing hand-tucked cartons with cartons sealed automatically on a CECO Adjustable Carton Sealer, Perfect Foods, Inc., has gained many important advantages. Pilferage has been eliminated. Cartons are more rigid and perfectly square, providing better protection for contents and permitting a neater stacking job on store displays.

CECO *Models*

Model	Carton Feeding and Opening	Product Insertion	Sealing or Tucking
45	Automatic	Automatic	Automatic
40	Automatic	Manual	Automatic
3901	Manual	Manual	Automatic

ALL CECO models can be arranged to glue-seal both ends, seal one end and tuck in the other, or tuck in both ends. Range of adjustability can be varied as required.

SEND FOR CECO BULLETIN

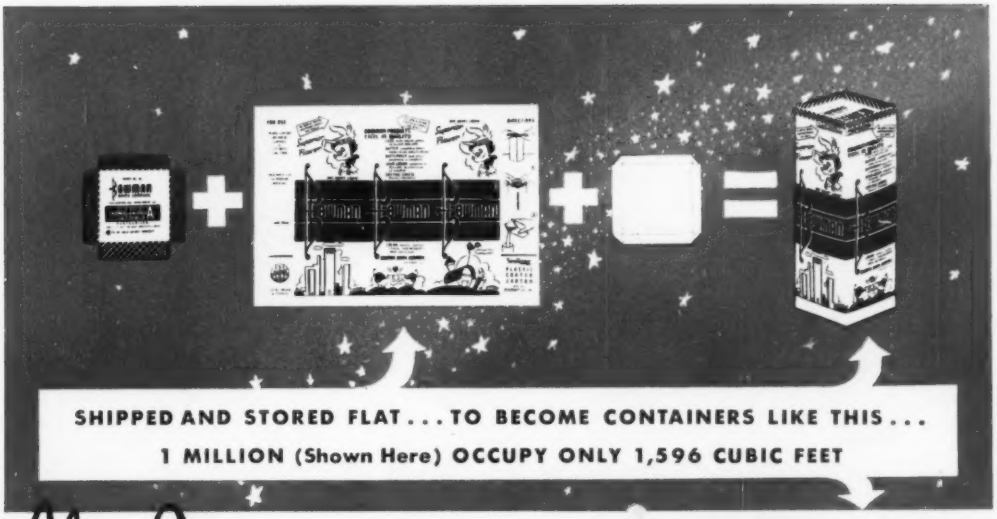
The CECO Adjustable Carton Sealer is adjustable quickly without tools by unskilled help for a wide range of carton sizes. Quantity production has brought down the cost of CECO Sealers so that even the smallest concern can enjoy the economy of mechanized packaging. This versatile, portable machine produces better-looking packages, in small or large quantities, at a saving in labor and upkeep that will pay for its low initial cost within a year.

CONTAINER EQUIPMENT CORPORATION

MEMBER, PACKAGING MACHINERY MANUFACTURERS INSTITUTE

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BALTIMORE • CHICAGO • JACKSON • PITTSBURGH • ROCHESTER
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New Star in the Milky Way



Now, for the first time, paper milk containers travel to bottling plants in flat sheets.

An economical coating of heat-sealable VINYLITE Resin on the printed, die-cut sheets turns the trick. The sheets are ready to be sterilized, formed, assembled, heat-sealed, filled, closed, and dated—all in a newly perfected, automatic machine.

The revolutionary new "Sealking" containers were developed and are manufactured by the Sealright Company, Inc. One million of them occupy a space of only 1,596 cubic feet!

This brilliantly engineered packaging technique is adaptable to other dairy products such as cream and buttermilk, as well as to fruit juices and beverages of many kinds.

It is one of a host of ideas developed by progressive package designers utilizing the many useful properties of VINYLITE Brand Resins and Plastics. In addition to heat-sealability, these properties include resistance to water, oils, greases, and most strong acids and alkalies . . . plus freedom from taste, odor, and toxicity.

Available in a rainbow range of colors, transparent, translucent, or opaque, VINYLITE Brand Plastics and BAKELITE Polyethylene Plastics have something extra to offer you in packaging. Our representatives will gladly discuss your problems with you. Just write Dept. GW-55.

Vinylite BRAND **RESINS**

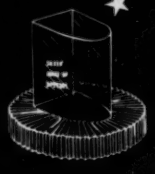
BAKELITE DIVISION UCC

BAKELITE DIVISION, *Union Carbide and Carbon Corporation*, 30 East 42nd Street, New York 17, N. Y.

Problem by helena rubinstein



Answer by SHAW-RANDALL



Here's the way Helena Rubinstein Art Department and Shaw-Randall packaging know-how solve a tricky merchandising problem. Imagination and technical knowledge produce a combination sale on Helena Rubinstein face powder and foundation.

The transparent acetate container locks the two products in a one-piece unit that is appealing, practical, and economical. Let Shaw-Randall figure out your packaging problem.

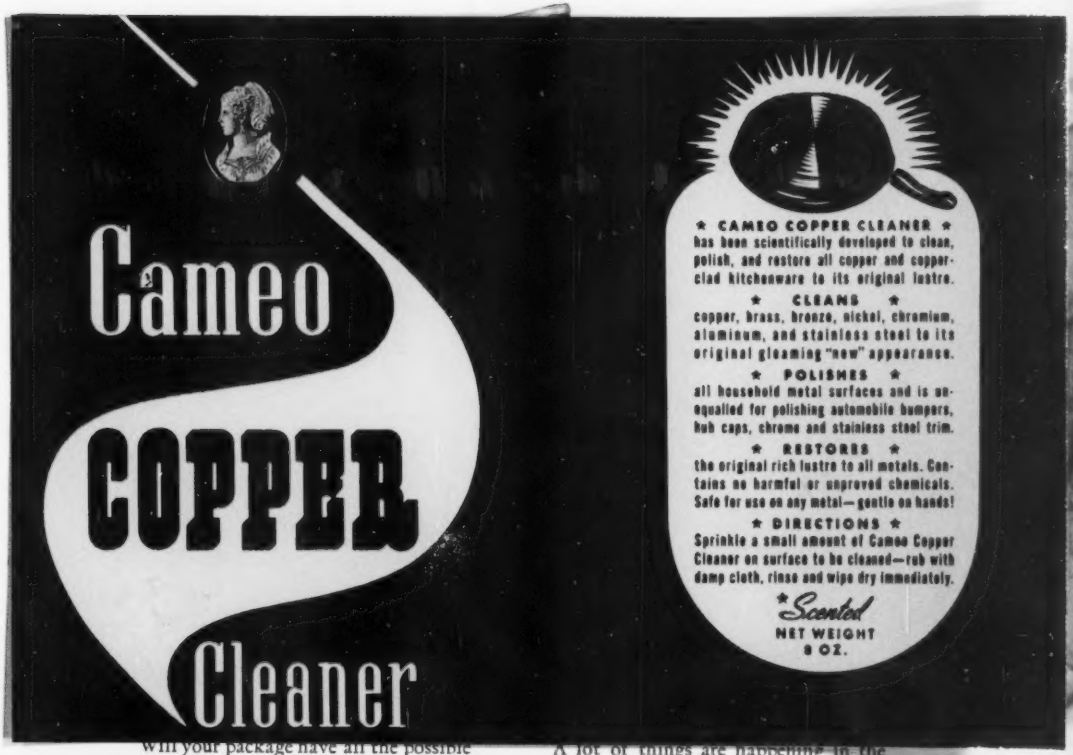
SHAW-RANDALL CO., INC.

Affiliated with Shaw Paper Box Co.

PAWTUCKET, R. I. New York Office — 545 Fifth Ave.

Just another Job

...but a *Beautiful* Job!



Will your package have all the possible 1951 Eye Appeal? *It's time you checked.*

A lot of things are happening in the packaging field to add more eye appeal.

Let us put the Scherer Know-how to work for you. Write!

John R. Scherer Co.
INCORPORATED

820-26 N. CICERO AVE., CHICAGO 51, ILLINOIS

LABELS & WRAPS *PRINTED ON* **FOIL PAPER GLASSINE**

designers and manufacturers of distinctive printed packaging



Tomorrow, A Garden!

Almost overnight man can transform a barren desert into life-giving, productive soil. So, too, Columbia's technicians and creative engineers will take a manufacturer's basic idea and fashion from it a finished, marketable plastic product of unlimited sales potential.

Columbia

CUSTOM MOLDERS OF PLASTIC PRODUCTS AND SPECIAL PLASTIC PACKAGING

COLUMBIA PROTEKTOSITE COMPANY, INC. • Carlstadt, New Jersey

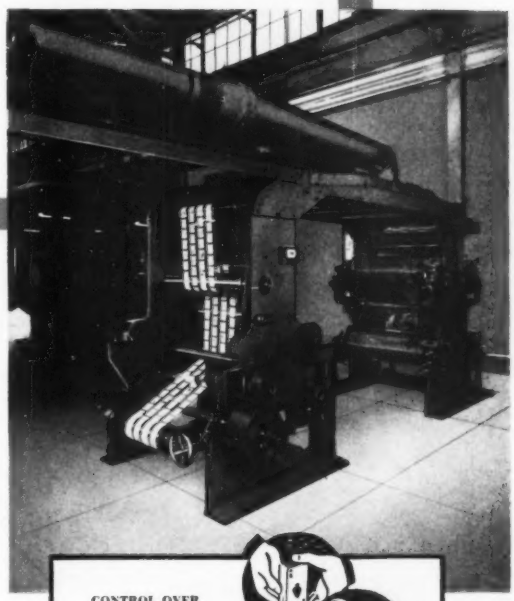
New York Showrooms: Empire State Bldg. • West Coast Office: 380 Bayshore Blvd., San Francisco, Calif.

ONE OF AMERICA'S LEADING MANUFACTURERS OF SUN GLASSES, COMBS, BRUSHES, TOYS, HOUSEWARES

New 30"
ANTI-FRICTION CELLOPRINTER

Increases Production at least 20%

Semi-automatic web-splicing units plus speeds up to 500 ft per minute make this Kidder Press outstanding



Combining the best features of time-tested Kidder Aniliner and Celloprinter presses with revolutionary new features, this entirely new machine promises you record-breaking production in high-quality, four-color Cellophane printing up to 32" web and printing width up to 30".

NEW WEB-SPLICING DEVICE

Operating at speeds up to 500 feet a minute, this Kidder Anti-Friction Celloprinter allows you to make all-day runs at normal press speeds without stopping for roll changes. That's because of *new semi-automatic web-splicing units at both unwind and rewind ends*. Any skilled press operator can learn to handle this web-splicing device in only a few hours. Think what this feature alone will mean to your production. A 10% increase is a conservative estimate. (These new web-splicing units are also available for Kidder 24" Celloprinter presses.)

OTHER PRODUCTION-BOOSTING FEATURES

- **A One-Man Press** — a single hydraulic control valve allows operator to release all the plates from the web.
- **Easy to register** — handwheel adjustment of lateral and longitudinal register is 3/16" in either direction . . . *operable while press is in motion.*
- **Special drying system** — not only dries the completely printed web, but also provides for partial drying in-between colors.

CONTROL OVER THE PAPER

PROPER DISTRIBUTION OF INK

ACCURACY OF THE IMPRESSION



KIDDER
THREE POINT
PRESS

KIDDER

Manufacturer of "3 Point" Presses — so-called because they fulfill the three major requirements for perfect printing.

WRITE FOR SPECIFICATIONS AND COSTS

This new Kidder 30" Anti-Friction Celloprinter Press is so outstanding that you'll want to read all about it. Write today.

KIDDER PRESS COMPANY, INC.

DOVER, NEW HAMPSHIRE

A. E. MARCONETTI, INC.
Empire State Bldg., New York 1, New York

MACHINERY SERVICE COMPANY
P. O. Box 33, Los Angeles 11, California



VISIBLE QUALITY IN THE PACKAGE CAN REFLECT THE INVISIBLE QUALITY OF THE PRODUCT . . .

Leading Manufacturers of Pharmaceutical Products, Recognizing That Fact, Give Preference to

Ridgelo
CLAY COATED
REG. U.S. PAT. OFF.
BOXBOARDS

FOR FINE FOLDING CARTONS

BRIGHT FAST AND SOIL RESISTANT COLOR ASSURED UNIFORMITY BRIGHTER – SMOOTHER
CONTROLLED COLOR MATCHING HIGHER VARNISH GLOSS SUPERIOR PRINTING SURFACE
LUSTROUS BRUSH FINISHES AND EMBOSSINGS CUSTOM MADE FOR EVERY ORDER

MADE AT RIDGEFIELD, N. J. BY LOWE PAPER COMPANY

Representatives

H. B. Royce, Detroit
Philip Rudolph & Sons, Inc., Philadelphia
A. E. Kellog, St. Louis
Norman A. Buist, Los Angeles



NEW MOISTUREPROOF, SIFTPROOF PACKAGE

made with Du Pont Polythene Film

Packaging a finely powdered product that's almost like a liquid in its tendency to seep through crevices in a package . . . that's the problem which faced the Borden Company when they sought a suitable package for Starlac. Furthermore, this non-fat dry milk will quickly absorb moisture and become lumpy.

The solution to this problem proved to be a pre-liner made of a tough skin of Du Pont Polythene laminated to greaseproof paper. Moisture can't seep in . . . powder can't sift out.

The efficient carton—with the liner already inside—is automatically set up, filled, and heat-sealed. Filling is easy because the liner mouth is held wide open by the carton body. And the sealed package will hold its contents tight and dry through almost any kind of rough handling.

If you have a similar problem, you'll find containers pre-lined with Du Pont Polythene Film can be adapted to meet many special requirements.

For further information on how to use Du Pont Polythene Film in sheet, bag, liner, or laminated form, write the Film Department, E. I. du Pont de Nemours & Co. (Inc.), Nemours Building, Wilmington 98, Delaware.



Package designed and manufactured by the Interstate Folding Box Company, Middletown, Ohio

USE DU PONT POLYTHENE FILM FOR PACKAGING MATERIAL THAT IS

- Tough, strong, flexible
- Lightweight
- Chemically inert
- Highly resistant to water
- Moisture-vaporproof
- Nontoxic; suitable for use on food products
- Long-lasting—permitting re-use
- Sealable by heat, sewing and adhesives

Du Pont Polythene Film

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY


Good IDEAS
Result from Sound Experience
In the design and production of
CLEVELAND CONTAINERS
Their Strength . . . Rigidity
. . . Attractiveness
are outstanding.
Our large production capacity and
conveniently located plants
ensure prompt customer
service at low cost.
Combination metal
and paper cans.
Fibre and paper
cans. Tubes of
paper, fibre and
plastics. Cores—
mailing cases, etc.
Ask for our special folder
. . . and helpful suggestions.
The CLEVELAND CONTAINER Co.
6201 BARBERTON AVE. CLEVELAND 2, OHIO
• All-Fibre Cans • Combination Metal and Paper Cans
• Spirally Wound Tubes and Cores for all Purposes
PLANTS AND SALES OFFICES: Cleveland, Detroit, Chicago, Plymouth, Wisc., Jamesburg, N. J., Ogdensburg, N. Y. • ABRASIVE DIVISION at Cleveland
SALES OFFICES: Grand Central Terminal Bldg., New York City; Washington Gas Light Bldg., Washington, D. C.; West Hartford, Conn.; Rochester, N. Y.
Cleveland Container Canada, Ltd., Prescott, Ontario • Offices in Toronto and Montreal

MERCHANDISING IMPACT
built on Facts from Forbes

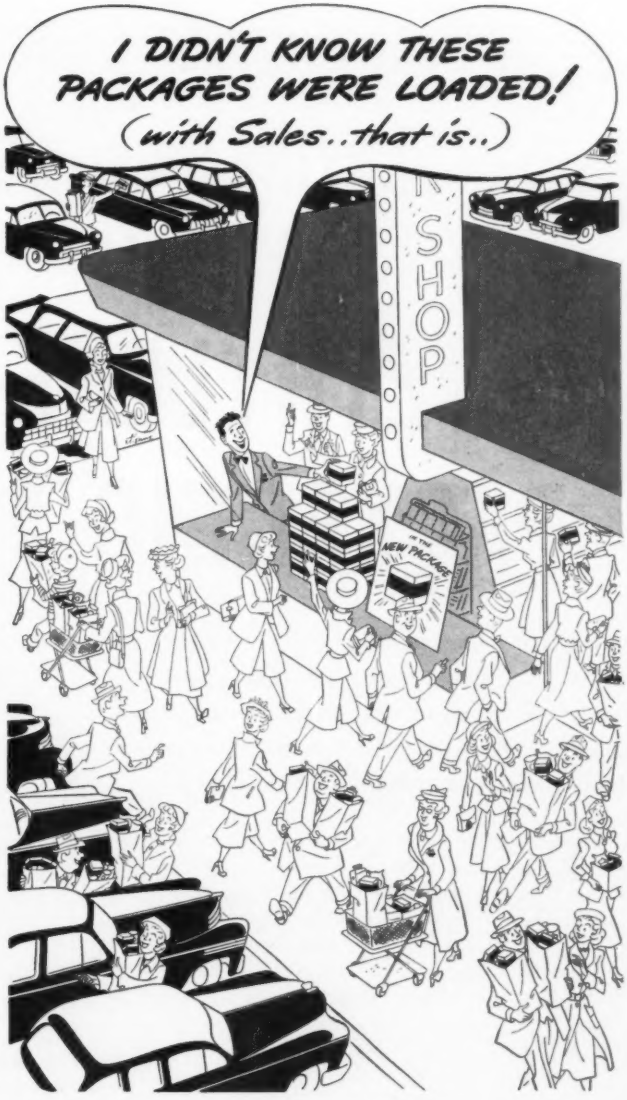


MERCHANDISING SENSE stands out in these Foss packages *letter-pressed in 4 colors by Forbes.* The unique "Big Saving" display flap on the combination-sale package, the radio advertising tie-up flap on the Vanilla package, the prominent offer on the bottom of each, and the billboard effect of the new Colors package all add up to factual planning. Notice, too, that the design of the Combination package retains the identities of the individual packages. Schlotterbeck and Foss Company's agency is Sutherland-Abbott.



COLOR SELLS GOODS for Gracious Living, Inc., promotors of a Club Plan of buying. Their 32-page, 9" x 12" Catalog Booklet, *lithographed in 4 colors by Forbes,* features life-like reproductions of nationally advertised products in a sales-compelling way. Promotional folders, also capitalizing on the winning appeal of color, offer valuable premiums to members of Gracious Living Clubs at no extra charge. Advertising agency for Gracious Living, Inc. is George Goldsmith-Harold Tregar, Inc., Providence, R. I.

FACTS FROM FORBES help you increase the effectiveness of any form of printed merchandising. These facts come from Forbes' long experience, up-to-the-minute continuing studies and *unique* facilities in lithography, letter-press, web gravure and die stamping under one-roof management control. Ask the Man from Forbes to tell you more.



Don't make that mistake. Break the good news to your dealers that your packages are loaded both inside and out when they're *impact-packed by the Facts from Forbes.* Results are immediate, our clients say.



FORBES LITHOGRAPH CO.

NEW YORK · CLEVELAND · BOSTON · CHICAGO · ROCHESTER

Delivers Merchandising Impact

Riegel Announces...

ENTIRE NEW GROUP of

POLYETHYLENE-COATED PACKAGING PAPERS

• New equipment at Riegel Mills extrudes polyethylene film (without laminating agent) on endless variety of lightweight packaging papers... foil, glassines, greaseproofs, sulphites...as well as on heavy paper and board.

A vast new field of applications for polyethylene has been created by Riegel's extrusion of this new film on nearly all types of lightweight packaging paper. Such combinations provide technical qualities impossible to secure with polyethylene or paper alone. Printing costs are reduced, body and stiffness easily supplied and remarkably tight seals obtained at high operating speeds ...often at lower cost than film alone or present materials. Here are the facts.

How Polyethylene Offers Better Protection. Riegel polyethylene-coated papers have excellent resistance to water, moisture, chemicals and solvents. Even acids and alkalis can be packaged. Moisture vapor transmission resistance and flexibility are extremely good at low temperatures, making ideal packaging papers for the frozen food field. There is excellent resistance to animal and vegetable oils and fats, and good resistance to mineral oils. Polyethylene-coated papers are tasteless, odorless and nontoxic. They will not crack under repeated folding at minus 40° F. They not only maintain their protective qualities at sub-zero temperatures but will hold hot coffee or soup satisfactorily. Blocking resistance is excellent even under tropical conditions. Polyethylene papers have tough scuff resistance and a puncture resistant surface.

In appearance Riegel polyethylene-coated papers have a high gloss and offer excellent sales appeal.

Perfect Packages at High Speed. Riegel polyethylene-coated papers form smoothly at high speed. They can be heat-sealed at 250° F. Strong fast seals can be made coating-to-coating or coating-to-base paper. The extensibility of the coating under stress allows it to retain its form as a film even if the paper fibers are torn apart. Heat sealing is recommended for these papers although some rubber base adhesives have given good results.

Extensive Laboratory Facilities Ready to Check Your Application. Because polyethylene has a few peculiarities, every new application should be checked carefully, whether it be all film or a film and glassine combination. Our Paper Performance Laboratory will thoroughly check each application individually. In many cases a special Riegel paper can be selected to supplement the properties of the polyethylene – in all cases our packaging engineers will be able to choose from over 600 different Riegel papers to give you the best combination for your specific requirements.

RIEGEL PAPER CORPORATION
342 Madison Avenue, New York 17, N. Y.

First ingredient of a successful carton ...GRAY matter!



Trained minds go to work the minute you tell us your packaging problem!

ENGINEERS figure costs, economy, compactness, production;

MERCHANDISING brains study the possibilities for display, sales appeal, advertising value and name identification;

ARTISTS decide upon design, visibility, suitability to the product's needs, and the all-important color selection;

PRODUCTION MEN work out such practical problems as board weight, printing quality, ink standards, die, cut and score requirements.

A few of the nationally famous companies who use United Board & Carton services

•

Armour & Co.
Diamond Match Co.
The Electric Auto-Lite Co.
General Motors Corp.
Goodyear Tire & Rubber Co.
Lily Tulip Cup Corp.
The Kroger Co.
U. S. Gypsum
Tobin Packing Co., Inc.
Peter Cailler Kohler

A HALF CENTURY OF KNOW-HOW

The skill, know-how and specialized training that go into the building of your cartons are very important values to you. They frequently are worth far more than the actual carton itself. Let us tell you how United Board & Carton's half-century of experience can mean dollars in your pocket. It costs nothing to find out. Just write or wire.

UNITED BOARD & CARTON CORPORATION

17 SOLAR ST., SYRACUSE, N. Y.

Board Mills: LOCKPORT, THOMPSON, N. Y., URBANA, O.; Carton Plants: SYRACUSE, VICTORY MILLS, CONOES, BROOKLYN, N. Y., SPRINGFIELD, O.

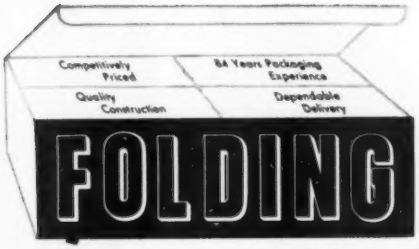


October brings National Wine Week and certainly the emphasis is on National.

For fine products and expert public relations have made America a wine country and wine a national drink.

Hazel-Atlas is privileged to supply many of our progressive vintners with bottles that display and sell.

HAZEL-ATLAS
GLASS COMPANY
WHEELING, W.VA.



FOLDING CARTON USERS ARE PROFITING

—through the use of Ritchie's most modern machinery and methods known to the packaging industry.

Performance more than fulfills our promise! Early this year we announced Ritchie's addition of a Folding Carton Division. At that time we promised you the benefits resulting from the Newest, Most Modernly-Equipped Folding Carton Plant in the industry. Today, more and more Folding Carton Users are Profiting from these advantages of Competitive Pricing . . . Quality Construction . . . 84 Years of Packaging Experience . . . and Dependable Delivery. The Folding Cartons shown below are only a few examples.

Let us show you what we can do for you on *your* Folding Carton or other packaging problems.

Seal-end Type—one of the many varieties of Folding Cartons that Ritchie can produce to meet your special requirements.

Tuck Top—Lock Bottom. All plates for Ritchie Folding Cartons are unmounted, bringing you a saving in plate and stock costs.

Reverse Tuck Type—all Ritchie Folding Cartons are pre-folded, horizontal to the glue-lap—making assembly operations easier, faster.



SEND FOR FREE IDEA BOOK

Free copy of "101 Ways to get Better Packaging", a handy reference booklet every package buyer should have, will be sent to manufacturers, on request. Includes helpful chart for evaluating present packages and planning new ones. Check and send in the coupon today.



W. C. Ritchie AND COMPANY
A Source of "Packaging Satisfaction" Since 1866

8840 BALTIMORE AVE., CHICAGO 17, ILL.
New York•Los Angeles•Detroit•Dallas•Denver
Providence•St. Louis•Cleveland•Jacksonville

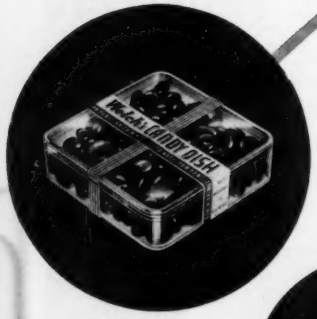
W. C. Ritchie and Company
8840 Baltimore Ave., Chicago 17, Ill.

Please send my copy of brochure "101 Ways to Get Better Packaging", also suggestions and quotations on ☐ Set-Up Boxes ☐ Fibre Cans ☐ Transparent Boxes ☐ Folding Cartons. ☐ Please have a Ritchie Representative call.

SIGNED..... TITLE.....
COMPANY NAME.....
STREET ADDRESS.....
CITY..... ZONE..... STATE.....

8270

Sweets They See SELL BEST in Tri-State RIGID PLASTIC BOXES



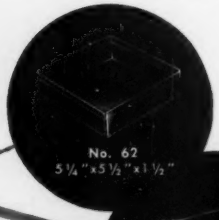
The James O. Welch Co. packs Pom-Poms, Junior Mints and Ditto Nuts in this stock box, No. 92F (4⅝"x4⅝"x 1¼"). Reports steady sales rise from introduction of the new package.

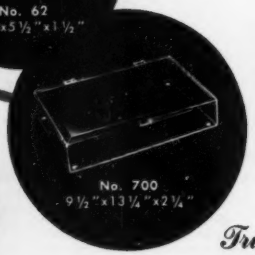


Colonial House Candy Stores, New Jersey's largest candy chain, upped summer sales by packaging warm-weather candies in our stock box No. 29K (4"x4"x3½").

Candy manufacturers pack new point-of-sales punch with RIGID PLASTIC BOXES molded by Tri-State. Customers see candy-kitchen freshness at its best inside a gleaming transparent individual showcase — safely guarded from dust, dirt and contamination.

Whether you've a mass-sales item, a premium idea, or a quality-candy package in mind—there's a Tri-State RIGID PLASTIC BOX to fit your product . . . build your sales . . . reduce packaging operations. If we cannot satisfy your needs from our wide range of stock sizes and shapes, we'll mold to your specifications.


No. 62
5¼"x5½"x1½"


No. 700
9½"x13¼"x2¼"


No. 175
Diam: 6" x 1½"
deep

◀ Stock boxes shown here represent only a few of our many available inspirations . . . for after-dinner mints . . . for salted nuts . . . for a quality, 5-lb. assortment . . . for low-priced, small-candy selections.



Tri-State Rigid Plastic Boxes - Protect Freshness - Promote Sales - Provide Bonus Utility Boxes Your Customers Can Use

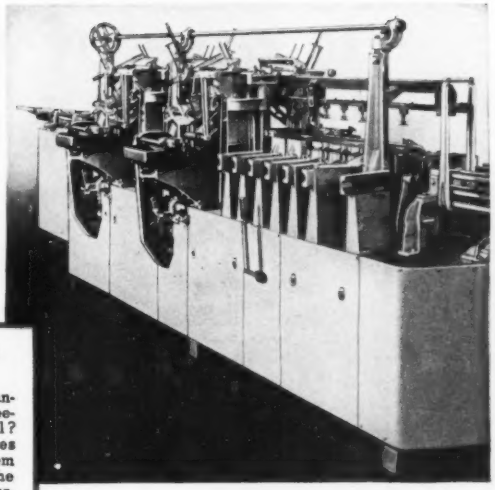
The best Rigid Plastic Boxes are Injection Molded by

TRI-STATE PLASTIC MOLDING COMPANY

HENDERSON, KENTUCKY

New York: 12 E. 41st St.—Murray Hill 3-6572 Chicago: 176 W. Adams St.—Franklin 2-7292

DOES YOUR LABELING MEASURE UP TO *World* STANDARDS?



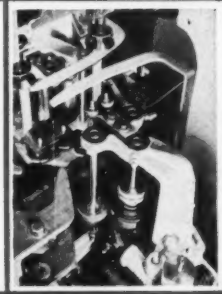
check YES | NO



ACCURATE FEEDING OF CONTAINERS

Do you have the advantage of **Bee-Line's** free-wheeling Starwheel? Automatically spaces containers, feeds them correctly through the machine. If container arrives out-of-position, Starwheel stops to free the container, puts it back into proper timing, then restores normal, correctly-synchronized feed.

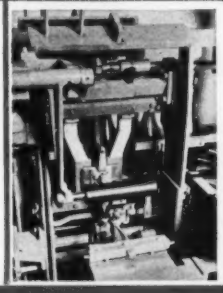
check YES | NO



ACCURATE POSITIONING OF CONTAINERS

Do your conditions require **Bee-Line's** Spotting Device? If so, this ingenious mechanical and hydraulic device is available to spin the container, then stop its rotation, then bring it gently on dead center and assure positive alignment for accurate label placement at a predetermined location on the container's circumference.

check YES | NO



ACCURATE LABEL REGISTRATION

Do you have the advantage of **Bee-Line's** Vacuum Gripfinger? Close-up shows Vacuum Gripfinger contacting the pickers. Pickers are opening for spreading of adhesive evenly over the entire label surface. Vacuum holds labels securely in position for controlled precision-register on the container.

Each of these advanced design-features can have a marked effect on the efficiency and economy of your labeling operations. Each is experience-engineered exclusively for WORLD **Bee-Line** Labelers

. . . to give you profitable, superbly neat, precision-labeling — applying body, neck and shoulder labels, and medallions down to postage stamp size, on a variety of container shapes and sizes

. . . to give you continuous, safe, steady, dependable handling, without detours, collisions, traffic jams or delays. There's a **Bee-Line** for your needs: Model 65 for production up to 65 per minute; Model 135 for production up to 2 a second. Bulletin contains details and floor plans, write for your copy.

WORLD BEE-LINE LABELERS

"YOU GET THE BEST LABELERS IN THE WORLD"

ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

WORCESTER, MASSACHUSETTS

New York Philadelphia Pittsburgh Chicago San Francisco Los Angeles Denver Louisville Salt Lake City El Paso Seattle Portland Phoenix London Montreal Toronto Winnipeg Newfoundland Vancouver Mexico City Sydney, Australia Wellington, N.Z. San Juan, P.R. Ciudad Trujillo, D.R. Honolulu, T.H.

Is one of these cans what you had in mind?

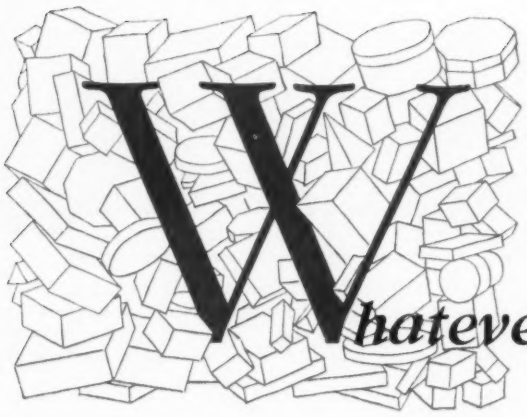


Name your product — and we'll wager that Continental can package it in style. We make hundreds of different sizes and types of cans, and a complete assortment of steel pails and drums. And if you're looking for something new in the way of merchandising appeal, we can give you lithography of prize-winning quality. Our staff of research scientists and technicians is constantly working to improve existing containers and develop new packaging techniques. And, with plants all over the country, we can assure you of a dependable source of supply. Why not check with Continental — today!

You can't beat Continental as a dependable source of supply!

CONTINENTAL CAN COMPANY

Eastern Division: 122 E. 42nd St., New York 17 Central Division: 135 So. La Salle St., Chicago 3 Pacific Division: Russ Building, San Francisco 4



Whatever their size or shape, boxes, cartons & caskets are transformed in appearance when dressed in the brilliant rainbow colours of Fisher's Aluminum Foil.

Whether your product has dignified class appeal or is intended for the mass markets, you will find in the wide Fisher range hundreds of scintillating new designs and colour combinations suited to your needs, or special printings to your own design and wording can be promptly arranged. Send to-day for samples, prices, and technical information.

FISHER'S FOILS LIMITED WEMBLEY MIDDLESEX ENGLAND
TELEPHONE: WEMBLEY 6011 CABLES & GRAMS: LIOFNIT, WEMBLEY (ABC CODE 6TH EDN)

Advertisers—How does your selection of Business Papers as advertising media score on this test?

QUESTIONS	YES OR NO	COMMENTS
Does your selection of media start on a basis of facts; namely, has the circulation been audited by an accepted authority in accordance with standards approved by leading advertisers and agencies?		The Audit Bureau of Circulations, an association of 3300 advertisers, agencies and publishers, provides standards and methods for auditing the circulations of published media. All publications that can meet A.B.C. standards are eligible for membership.
Paid subscriptions as indication of reader interest. Do you take this factor into consideration in evaluating the circulations of business papers?		A.B.C. Audit Reports give the average circulation, both paid and unpaid, for the period covered by the report.
Does your consideration include an audited breakdown of the subscribers by occupation and kind of business?		A.B.C. business paper reports show the vocational identity of subscribers and tell how much of the circulation goes to the specialized markets in which you are interested.
Do you compare the geographic distribution of the circulation with your sales activities and market potentialities?		For business papers in the U. S., A. B. C. reports give a breakdown of subscribers by states—for Canadian papers by Provinces—thus making it possible to compare coverage with analyses of sales and with distribution of other publications.
In evaluating media, do you take into consideration the channels through which the circulation is obtained?		A.B.C. reports show how many subscriptions were received by mail direct from subscribers, how many from catalog agencies, publisher's own and other field-selling organizations.
Do you check to find out how much, if any, of the circulation is sold at special reduced prices; or in connection with premiums?		When special reduced prices or premiums are used in obtaining subscriptions, A. B. C. reports show what these prices and premiums are and the number of subscriptions thus obtained.
In selecting business papers, do you check to see what percentage of the subscribers express continued interest in the publications by renewing their subscriptions?		A.B.C. reports for business papers give the percentage of renewals based on the number of expirations during a 12-month period and the renewals received within 6 months after expiration.
Do you study a paper's circulation growth over a period of years as an indication of publishing stability and progress?		A.B.C. reports show quarterly averages of the net paid circulation for the period covered by the report and for 3 years previously.



When you buy advertising space with the help of the factual information in A. B. C. reports you make sure of maximum value for your advertising dollars. This business paper is a member of the Audit Bureau of Circulations. Ask for a copy of our A. B. C. report and then study it.

MODERN PACKAGING

A.B.C. REPORTS — FACTS AS THE BASIC MEASURE OF ADVERTISING VALUE

BBD... 1ST in Aniline Ink ...because



in quality

First-class printing calls for first-class inks—that is why, wherever fine aniline printing is done, you will find BBD INKS in the fountain. "Tailor-made" to meet your individual needs, BBD INKS can be relied upon for rich, brilliant colors . . . clean sharp impressions . . . dense, even coverage. And, because BBD INKS are specially formulated to give you extra mileage and trouble-free press-runs, they are most economical, too.

in technical service

When you call for a BBD service-man you get a "shirt-sleeved" aniline ink specialist who can show you —on your own press—how to get better print quality.

...in research, too

In the field of aniline printing BBD was first with pigmented inks . . . first with metallics . . . first with a non-pucker ink for vinyl film . . . first with inks for pliofilm. When new stocks demand new inks . . . look first to BBD.

Bensing Bros. and Deeney

LARGEST MANUFACTURERS OF ANILINE INK IN THE WORLD

For printed samples that tell BBD's quality story better than words, contact your nearest BBD office . . .

401 N. Broad St., Philadelphia 8, Pa.
81 Albion Street, Wakefield, Mass.
2358 N. Seeley Avenue, Chicago 47, Ill.

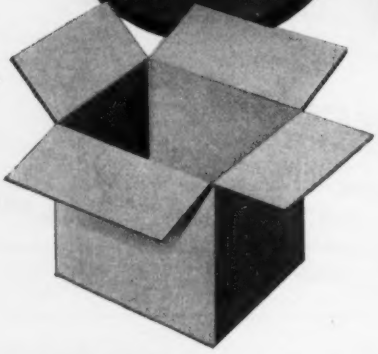
West Coast Distributor
A. M. BOJANOWER, LOS ANGELES 22, CAL.

Export Division
McLAURIN-JONES CO., NEW YORK 17, N. Y.

Gaylord Packaging

One Sure Way to Build Good Will...





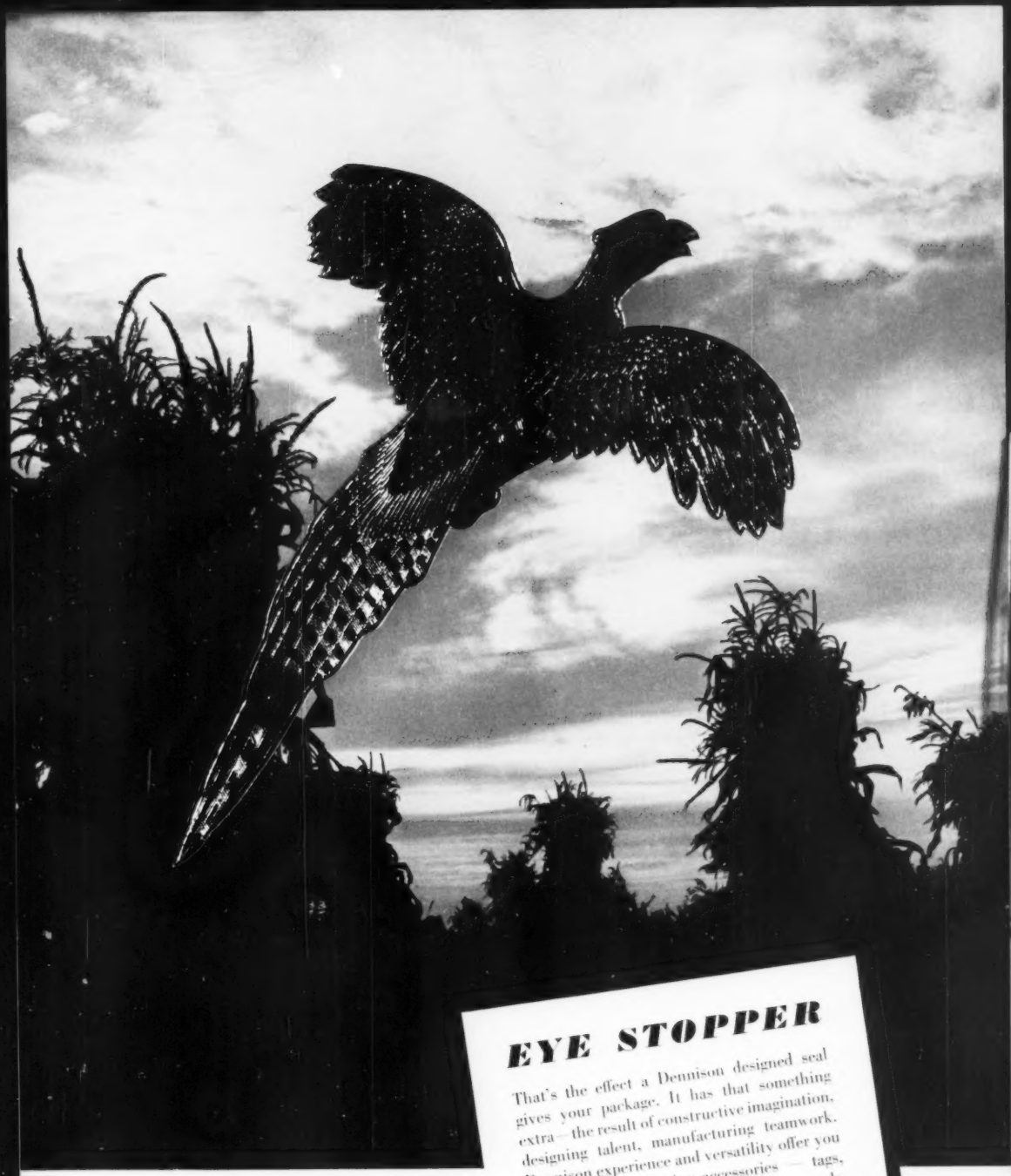
CORRUGATED AND SOLID FIBRE BOXES
FOLDING CARTONS
KRAFT BAGS AND SACKS
KRAFT PAPER AND SPECIALTIES

DON'T BE VULNERABLE TO COMPETITION BECAUSE OF UNNECESSARY DAMAGE CLAIMS

If your product is properly packaged, claims for damaged merchandise should be almost eliminated. Your customers know this. The annoyance involved in making claims for damage, as well as the sales lost because merchandise is not available, can open the door for your competitors. *Be sure* your shipping container is right for your product.

GAYLORD CONTAINER CORPORATION, General Offices: **ST. LOUIS**

New York • Chicago • San Francisco • Atlanta • New Orleans • Jersey City • Seattle • Indianapolis • Houston • Los Angeles
Oakland • Minneapolis • Detroit • Columbus • Fort Worth • Tampa • Cincinnati • Dallas • Des Moines • Oklahoma City • Greenville
Portland • San Antonio • Kansas City • St. Louis • Memphis • Bogalusa • Milwaukee • Chattanooga • Weslaco • Appleton
Hickory • Sumter • New Haven • Greensboro • Jackson • Miami • Mobile • Omaha • Philadelphia • Little Rock • Charlotte



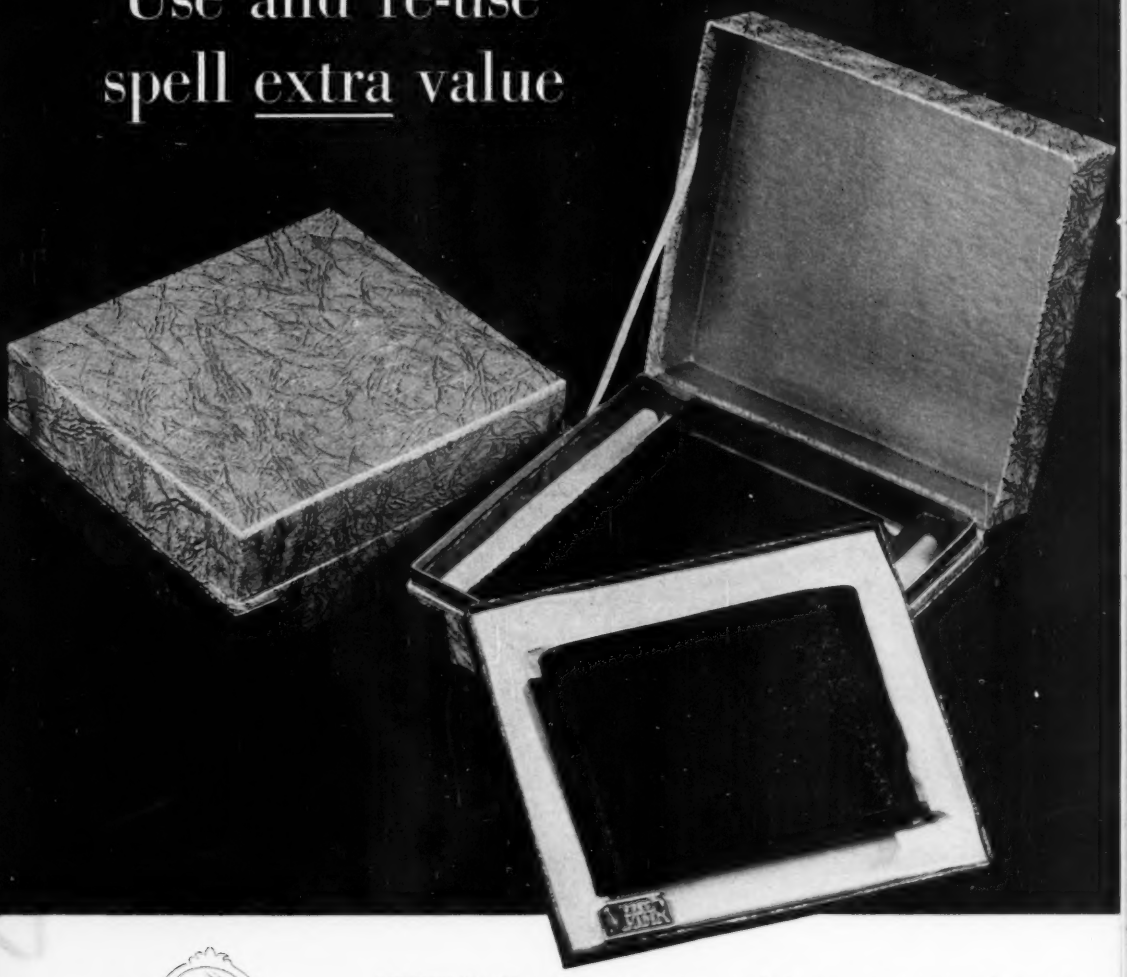
EYE STOPPER

That's the effect a Dennison designed seal gives your package. It has that something extra—the result of constructive imagination, designing talent, manufacturing teamwork. Dennison experience and versatility offer you the finest in packaging accessories — tags, seals, wraps, bands, labels, merchandise cards, set-up boxes. For samples and suggestions appropriate to your product, call nearest Dennison sales office or write Dennison Manufacturing Co., Framingham, Mass.

Dennison

PAPER PRODUCTS FOR MORE THAN A CENTURY

Use and re-use spell extra value





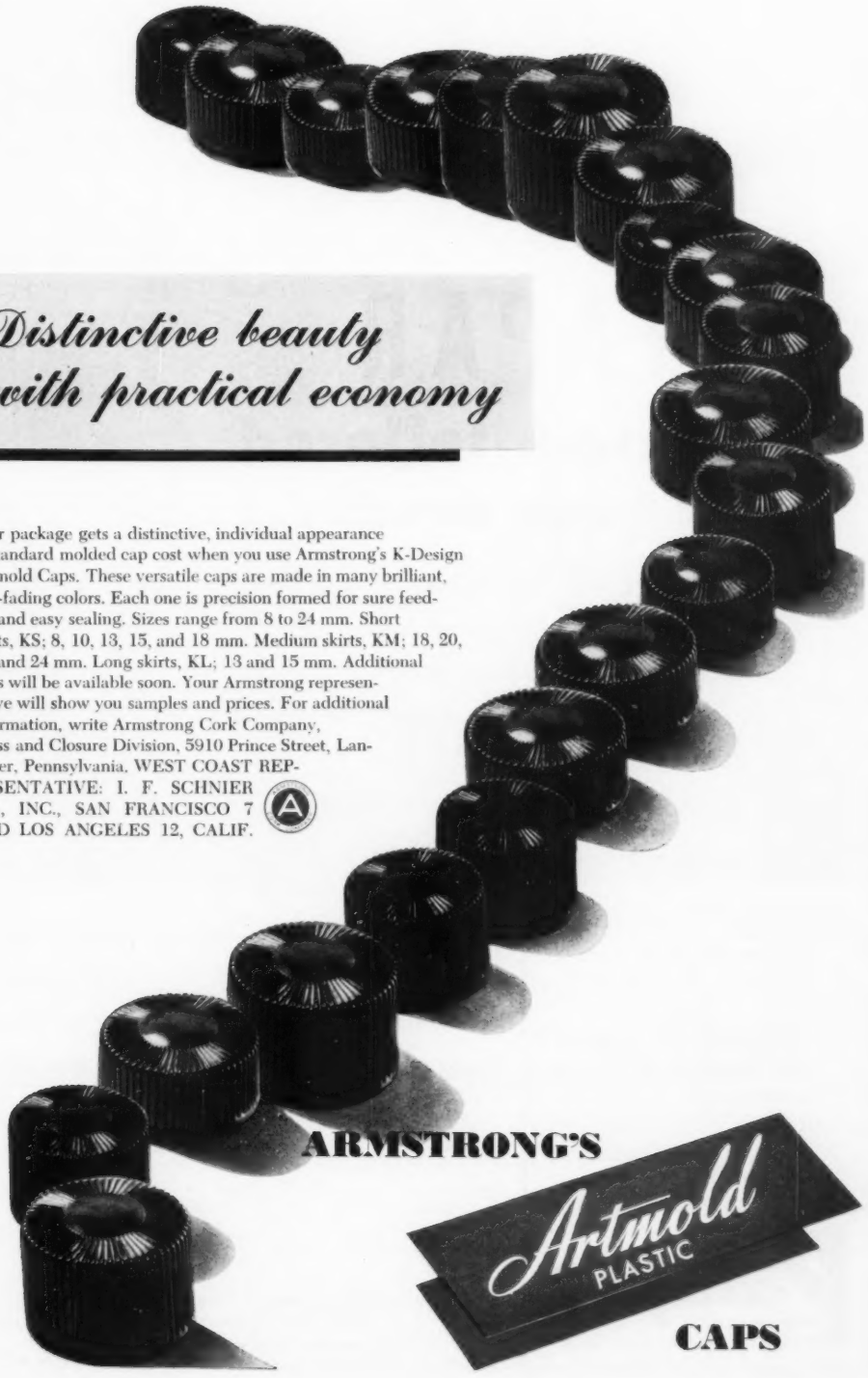
MEEKER-MADE leather goods inspire smart packaging and expert merchandising. This versatile package, for example, is designed to increase unit sales by providing a handsome gift cabinet for MEEKER billfold, key case and cigarette case: it is adaptable to combinations of two or three selected items.

Sales appeal is enhanced by re-use value, evident at first glance. The packaging personalizes the gift; then it becomes a beautiful jewel case with compartments all ready for rings, earrings, bracelets, necklaces. In fact, it is a very personal container, as the company identification does not appear on the package. MEEKER trademark is displayed by a gold foil embossed seal that can easily be removed.

Dennison designed set-up boxes demonstrate creative skill and technical proficiency built up by one hundred and six years of leadership in the field of packaging.

Call nearest Dennison office or write Dennison Box Division, Marlboro, Mass.

LOOK TO Dennison FOR PACKAGING THAT REFLECTS THE PERSONALITY OF YOUR PRODUCT



Distinctive beauty with practical economy

Your package gets a distinctive, individual appearance at standard molded cap cost when you use Armstrong's K-Design Artmold Caps. These versatile caps are made in many brilliant, non-fading colors. Each one is precision formed for sure feeding and easy sealing. Sizes range from 8 to 24 mm. Short skirts, KS; 8, 10, 13, 15, and 18 mm. Medium skirts, KM; 18, 20, 22, and 24 mm. Long skirts, KL; 13 and 15 mm. Additional sizes will be available soon. Your Armstrong representative will show you samples and prices. For additional information, write Armstrong Cork Company, Glass and Closure Division, 5910 Prince Street, Lancaster, Pennsylvania. WEST COAST REPRESENTATIVE: I. F. SCHNIER CO., INC., SAN FRANCISCO 7 AND LOS ANGELES 12, CALIF.

ARMSTRONG'S

Artmold
PLASTIC

CAPS



PATAPAR

is custom-tailored to fit your needs...

Need a paper that's strong when wet? Patapar Vegetable Parchment gives it to you. Want a paper that resists grease? Patapar is your answer. Want package sales appeal? A colorfully printed Patapar wrapper really sparkles.

Patapar is produced in 179 types. Each type is "custom-tailored" to meet special needs. Types vary as to wet-strength, grease-proofness, opaqueness, moisture vapor resistance, pliability, thickness and many other qualities.

Tell us your requirements. We will recommend the type of Patapar best suited to meet them.

BEST PAPER FOR:

Butter wrappers
Ham boiler liners
Deep freeze wraps
Can liners • Fish wrappers
Cheese wrappers
Margarine wrappers
Milk and cream can gaskets
Bacon wrappers
Vegetable wraps
and many other uses

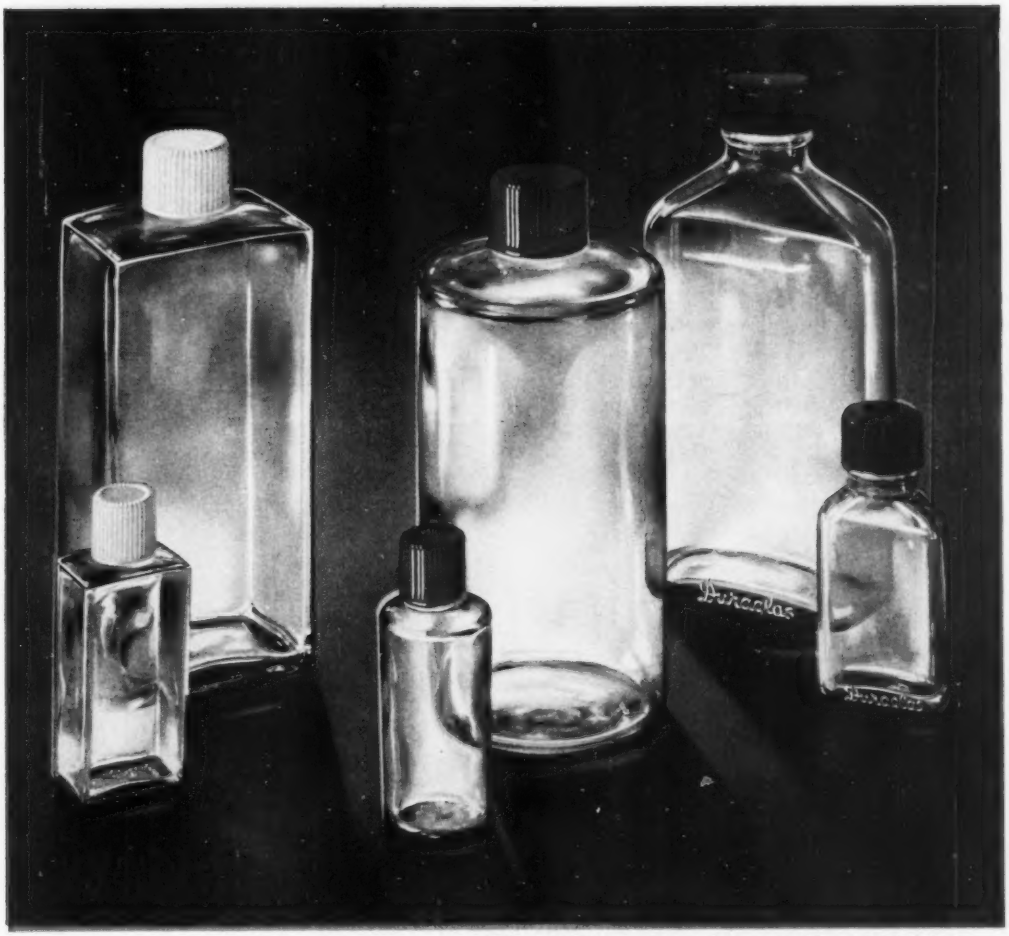
Patapar is furnished plain or beautifully printed in one or more colors

Patapar
HI-WET-STRENGTH
GREASE-RESISTING PARCHMENT



Patapar Keymark, nationally advertised symbol of wrapper protection

PATERSON PARCHMENT PAPER COMPANY • BRISTOL, PENNSYLVANIA
Headquarters for Vegetable Parchment since 1885
West Coast Plant: 340 Bryant Street, San Francisco 7, California
Sales Offices: 122 E. 42nd Street, New York 17, N. Y. • 111 W. Washington St., Chicago 2, Ill.



Like father, like son! "Junior" bottles look just like the bigger ones, help customers to recognize your brand in every size.

"Junior looks like Papa!"

and because "he" does,

customers pleased by samples can quickly identify and buy your standard sizes

Often, products are offered in sample packages that have no resemblance to the standard-size bottles that pleased customers are expected to buy.

Prepare to capitalize on the extra sales appeal of package similarity when you sample. Tiny sample or trial-size Duraglas bottles are available in the same style as the larger standard-size bottles that will carry your product to market.

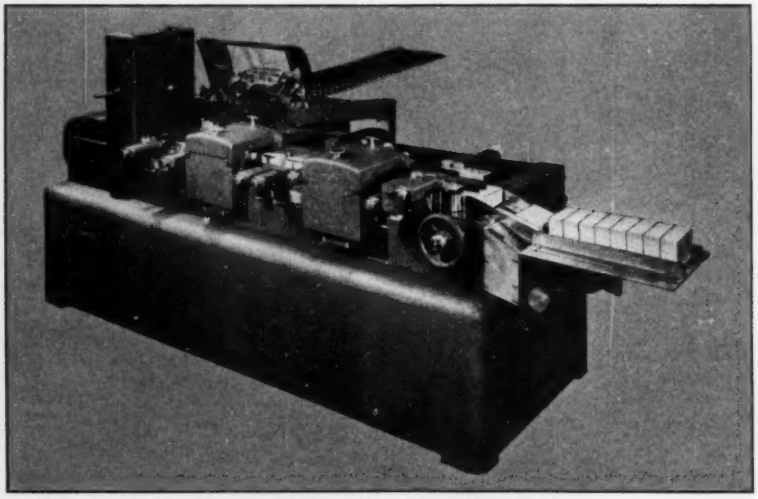
This extra promotion advantage is yours at low cost through the use of stock-mold Duraglas containers. Choose from our full range of sizes in many different styles.

Let us show you how economical and efficient Duraglas containers can be for your operation. Our fully staffed office in your city will gladly give you full details without obligation. Call now.

Duraglas Containers are Protectors of Quality

OWENS-ILLINOIS GLASS COMPANY · TOLEDO 1, OHIO · BRANCHES IN PRINCIPAL CITIES

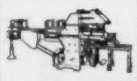
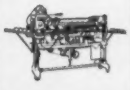
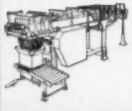
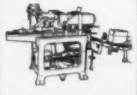
STANDARD-KNAPP EXPANDS ITS FAMOUS LINE TO INCLUDE ROCKWELL CARTONING MACHINES



FULLY AUTOMATIC CARTONING MACHINE
— formerly known as Rockwell Cartoning Machine

STANDARD-KNAPP has acquired the entire line of machinery and equipment formerly produced by Rockwell Packaging Machines, Inc. Designed for versatility, these machines will now be backed up by the engineering, manufacturing, sales and service facilities of the Standard-Knapp organization.

We are prepared right now to discuss the installation of cartoning machines in any plant. Inquiries are invited concerning the application of these and other machines in the Standard-Knapp line to your packaging problems.

UNLOADERS	UNSCRAMBLERS	LABELERS	CAN PACKERS	BOTTLE PACKERS	CARTON PACKERS	GLUERS & SEALERS
						

STANDARD-KNAPP Division of Hartford-Empire Company **PORTLAND, CONN.**



Made by Trenton Folding Box Company, Trenton, N. J.

. . . and not a wrinkle

Lumarith* TRANSPARENT FILM WINDOW AS SMOOTH AND FRESH AS IT WAS IN 1940

Most window boxes aren't meant to be kept a decade but here's one that has been. The unretouched photo is witness to the perfect condition of its Lumarith window—not a pull line or wrinkle . . . the same brilliant surface . . . the same look of crisp freshness as it had the day it was cemented.

Lumarith, one of the first of the modern transparent films continues to prove its leadership in the packaging field, with qualities unmatched by any other type of transparent film. It is the reason why Lumarith is the acknowledged choice of window box manufacturers. If you have a packaging problem that concerns transparency, shelf life, product protection and sales appeal, depend on Lumarith Transparent Film to solve it with complete satisfaction. Celanese Corporation of America, Plastics Division, Dept. 8-J, 180 Madison Avenue, New York 16, N. Y. In Canada, Canadian Cellulose Products Ltd., Montreal and Toronto.

*Reg. U. S. Pat. Off.

Celanese* PLASTICS



NEW WARE Delayed Action HEAT SEAL

The McLaurin-Jones Heat Seal line of label papers is now available for *delayed-action* heat seal applications. For the McLaurin-Jones research laboratories have perfected a new delayed-action adhesive with exceptional performance qualities. You can have samples of the new Ware delayed-action type of heat seal for the asking.

A Complete Line of Gummed and Coated Papers

Waretone — a deluxe quality sheet — mirror finished; *Old Tavern* — in gold or platinum; *Guaranteed Flat Gummed* — in white or colors; *Plated* — white or colors, gummed or ungummed; *Gummed Sealing Tapes* — Kraft or colors, printed or plain; *Veneer Tapes* — various grades, cloth or plain and perforated paper; *Gummed Cambrics; Sisal Tape; Gummed Hollands; Box Stay; Electrical Tapes.*

McLAURIN-JONES COMPANY

BROOKFIELD MASSACHUSETTS

OFFICES: NEW YORK • CHICAGO • LOS ANGELES

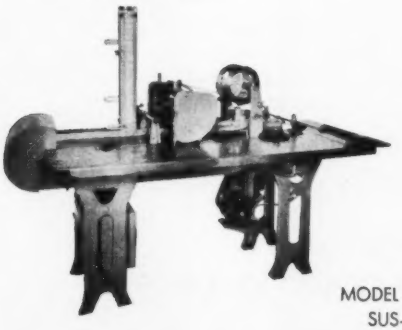
A McLAURIN-JONES Product



in cellophane
on SCANDIA machines—*

Suggests the MASS DISPLAY ADVANTAGE

A SERVICE
TO RETAILERS
THAT HELPS TO SELL
MORE MERCHANDISE



MODEL
SUS-6

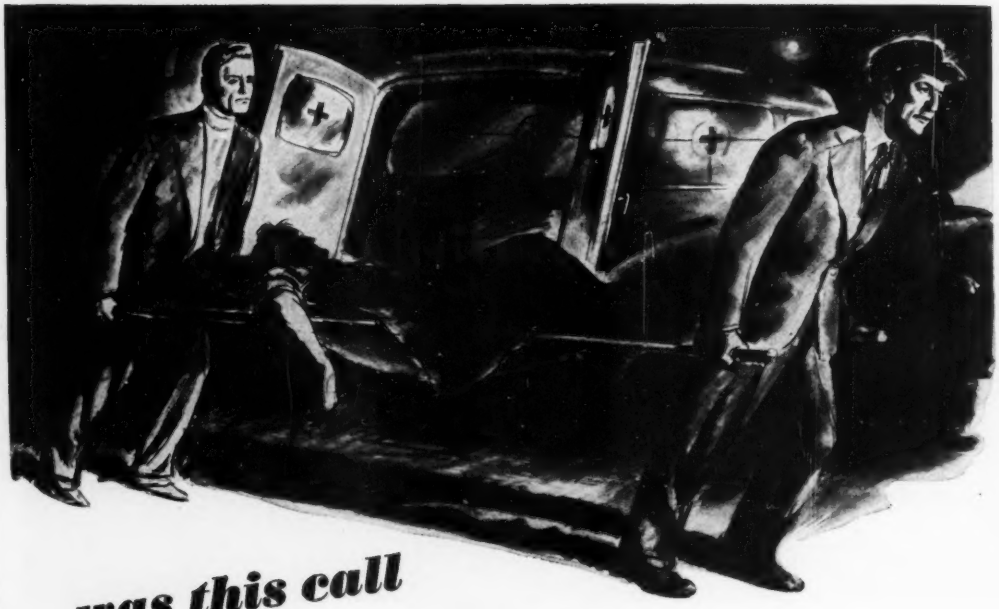
All-round PACKAGE VISIBILITY, with a decided saving in wrapping materials—a "fresh-as-a-daisy" appeal inviting retailers to set up the complete package in valuable display space . . . and wrapped at high speed with *positive* seal against atmosphere. Ask about BUNDLING, individual packaging, MULTI-PACKS, and BANDING, on Scandia machines . . .

Scandia

MANUFACTURING COMPANY

NORTH ARLINGTON NEW JERSEY

**manufactured under Bronander patents.*



was this call necessary?

Some "Moral Insurance" here might have avoided a serious accident

Workmen's compensation is a fine thing—but it can't replace a mangled arm.

Safety laws prevent many accidents—but they can't cover every hazard of an individual plant.

Accident prevention which goes *beyond the law* is an unwritten responsibility of every employer. It is his "Moral Insurance" for his employees welfare.

The premiums for "Moral Insurance" are not high. They do not have to be paid for in fancy safety gadgets. Their cost is simply the institution of common sense safety regulations covering all local hazards—enforced by employee committees with the full support of management.

Yes—"plant safety" is a mutual job.

DON'T FORGET—THE LIFE YOU SAVE MAY BE YOUR OWN

A PUBLIC SERVICE PROJECT — THE ADVERTISING COUNCIL

Published in the public interest by:

MODERN PACKAGING CORP.













why are so many



This Insert Printed by Milprint, Inc.

Milprint packages so successful?

A successful package starts with your

Milprint salesman who has helped develop many saleswinning packages in a great variety of industries. He interprets your packaging problem to

Milprint merchandising men whose wide experience in manufacturing, sales management and merchandising contribute a special combination of talents to the development of your package. Their merchandising suggestions are brought to life by

Milprint designers who have created the art treatment for thousands of successful packages. They have a practical knowledge of packaging materials and printing processes. But their special ability is knowing how to combine color, sales elements and design to put more "sell" into your package. Once the design has been completed and okayed

Milprint production men who have helped develop many Milprint packaging "firsts" carefully guide the final steps in building a successful package for you. Inventors as well as skilled craftsmen, they have designed much of the modern converting equipment used in Milprint's fourteen great plants.

This is the Milprint team, men who know how to build successful packages. Their 50 years of packaging experience can help make *your* package do a better selling job.

Call your local Milprint man, or write today. No obligation.

Printed Cellophane, Pliofilm, Acetate, Glassine, Plastic Films, Foils, Folding Cartons, Lithographed Displays, Printed Promotional Material.

Milprint INC
PACKAGING MATERIALS
LITHOGRAPHY & PRINTING

General Offices, Milwaukee, Wisconsin
Sales Offices in all Principal Cities

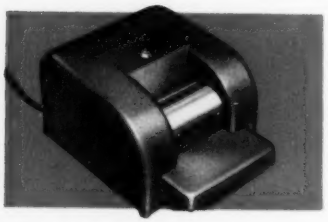


For Myers, this Heat Seal Label Paper Sticks to Aluminum Foil at —20°F!

Here's another outstanding performance — appearance story by Pervenac* — Nashua's revolutionary label paper. Bucks County Dressed Poultry Co., Plumsteadville, Pa., pack their frozen meat and poultry in Reynolds Pak Aluminum Trays — smart, sales-building packages every one — *including the labels.*

Mr. Myers, Proprietor, writes: "Just a line to inform you of the satisfactory results we are having with your heat seal label stock. We have been using it for some time for all of our labels that have to be frozen at temperatures of −20°. We run the labels through a Pervenactor machine at high temperature, they are applied to the package and then are placed in the −20° freezer room for 6 to 24 hours. We especially like this type of label because it is very quickly applied, is not at all messy and sticks to the aluminum tray paks better than any other label we ever used."

Do *you* want no-curl, no-wrinkle, no-drop-off labeling to foil, film, metal, glass, paper, plastics? Write Nashua or your nearest Pervenac distributor.



Bucks County Dressed Poultry Co. uses the Pervenactor (Trade Mark), Nashua's Portable Hand Activator. It's ideal for "stop and go" and problem labeling. Activates Pervenac labels up to 4 inches in width. With it a single operator can activate and apply large, small and intermediate sized Pervenac labels.

It's Pervenac on foil for a positive bond, quick identification, added good looks.

*Trade Mark
Manufactured under patent 2,462,029

NASHUA GUMMED AND COATED PAPER COMPANY
NASHUA, NEW HAMPSHIRE

NASHUA
MAKES PAPER MAKE MONEY FOR YOU

DISTRIBUTORS

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Hudson Valley Paper Company
ATLANTA, GA.
Whitaker Paper Company
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Central Paper Company
PHILADELPHIA, PA.
Rhodes Paper Company
D. L. Ward Company
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Whitaker Paper Company
PORTLAND, ORE.
West Coast Paper Company
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RALEIGH, N. C.
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Epes Fitzgerald Paper Co., Inc.
ROCHESTER, N. Y.
The Alling & Cory Company
ST. LOUIS, MO.
Acme Paper Company
ST. PAUL, MINN.
The John Leslie Paper Company
SAVANNAH, GA.
The Atlantic Paper Company
SEATTLE, WASHINGTON
West Coast Paper Company
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The John Leslie Paper Company
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EXPORT

MEXICO, CENTRAL AMERICA, SO. AMERICA, SO. AFRICA, and the FAR EAST
American Paper Exports, Inc.
New York City
UNITED KINGDOM, EUROPE, NO. AFRICA and the NEAR EAST
I. J. Szper, 65 Ave. Niel, Paris

Modern packaging



PROMOTIONAL POSSIBILITIES are increasing with the opportunity for visual demonstrations of package features over TV. Pat Tobin and Johnny Slagle show how easy-opening tape works on Mama's Old-Fashioned cookies package over a Detroit television station.

WANTED: more tear tapes

THERE'S DEMONSTRATED CONSUMER DEMAND FOR EASY-OPENING CONVENIENCE IN CELLOPHANE PACKAGES THAT IS PUSHING THE TEAR TAPE INTO MORE AND MORE PRODUCT FIELDS

When cellophane packaging was first getting its stride in the early '30s, somebody discovered that by putting a narrow strip of heavier-gauge cellophane against a thinner one and pulling the heavier narrow strip, you could tear the cellophane as clean as stripping birch bark off a tree.

This discovery established the principle for one of the most ingenious opening devices packaging has ever known—the cellophane tear tapes now so commonplace on cigarette, chewing-gum and many other packages.

Quickly the mechanical know-how for applying the cellophane opening tape to flexible packaging materials was developed. One of the first applications (1932) was for the Wrigley gum package illustrated on our cover (see Packaging's Hall of Fame story, page 104). A year later a machine was made for American Chicle Co. to carton and wrap Chiclets in cellophane with an easy-opening tape. The first machine had a printing attachment so that the words "pull tab to open" could be printed on the tape, a practice later omitted as the public became educated to the use of the tear tab.

Tearing tape entered the tobacco industry on wraps for smoking tobacco, one of the first machines for applying it having been made for U. S. Tobacco Co.'s Model brand. Next came the zipper packs for cigarettes—Raleighs first with a tear tape longitudinally around the center of the package, then Old Golds with the tape that tore off the top of the wrapper and in principle the standard for cigarette packaging today.

Within a few years almost every

Bakery products are naturals



TWIN-PACK bread is an outstanding example of tear-tape usage in the bakery field. Here cellophane tape opens the waxed paper outer wrap to reveal twin packs inside.



RESTAURANT PACKAGES of crackers with easy-opening tape are a popular new convenience. In some cases they have increased cracker sales as much as 400% in a month.

important chewing-gum and cigarette manufacturer was using a tearing tape on his package.

The trend to tear tapes was interrupted by World War II and the post-war sellers' market, but with the return of buyers'-market conditions in 1947 and '48 it was one of the first resources of cellophane packagers seeking to add an extra touch of appeal and convenience. Since then the tear tape has been extended to such fields as bread, crackers, cookies, drugs, medical supplies, toiletries, paper goods, small textile items and hundreds of other cases where a cellophane overwrap is used.

The development and improvement of mechanical devices for applying the tear tapes has kept pace with the extended use, so that now there are simple and practical attachments available to do the job on many standard cellophane-overwrapping machines.

The appeal of this convenience feature is basic—as attractive to packagers as it is to consumers—for it is no longer necessary to compromise on the strength of the film or the tightness of the seals to provide a really protective overwrap which can be removed so readily as to avoid all consumer complaints.

Despite the almost universal trend to tear tapes in some fields, however, the advantages of tearing tape have not yet been fully realized in hundreds of others.

Today when cellophane packaging is reaching unprecedented peaks and improved convenience for the consumer is becoming more and more the prime concern of every packager, it is a good time to consider the vastly broader applications of this simple convenience feature which can add so much to consumer acceptance of a package and which can win new friends for hundreds more products at comparatively little additional cost.

It is true that we are presently experiencing a serious shortage of cellophane, but the amount of the film required to provide tear tapes for average-sized packages is so small as to be inconsequential. One pound of 0.001-gauge cellophane, laminated 0.002 in. thick and made into tape $^{3}/_{32}$ in. wide, provides nearly $1^{1}/_{2}$ miles of tape, or sufficient for openings, $6^{3}/_{4}$ in. long, on 13,925 packages of cigarettes. Since the tear tape provides a measure of convenience far out of proportion to the amount of material involved, no move has been made to restrict its use. It is safe to say that, for the present, if you can get enough cellophane to wrap your packages, you can also get tear tapes to open them. And with good prospects that the cellophane shortage will be alleviated within the next year, the tear tape is a top subject for consideration of all package planners.

Ask any housewife who has struggled to open one of those laminated cellophane packages for processed cheese how she likes it! And just how do you start to tear open a tightly sealed cellophane bag of cookies if there is no tearing notch or other device to start it easily? Cellophane packages for paper napkins, powder puffs, toothbrushes, razor blades and baby pants can be just as annoying to open. And there are thousands more.

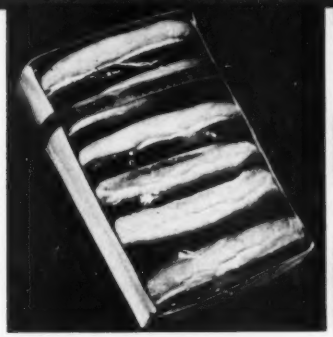
Blithely the users of those packages talk about the visibility features and fine protective qualities. A great many of them have given very little thought to the substantial advantage they could have for a comparatively small investment in a convenient opening device that consumers have demonstrated they like.

A recent study by a Middle Western university showed that while women almost universally like cellophane packages, more than 60% of those interviewed said they experienced trouble in opening them. When asked if they preferred some kind of opening device, 82% favored tearing tapes, while another 12% preferred either a tear tape or a slit in the cellophane at the edge of the seal.

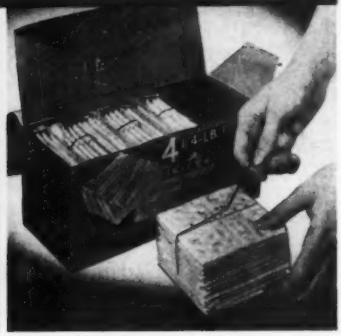
When asked to suggest cellophane-wrapped products which they felt needed a special opening device, quite a number said all cellophane-wrapped packages should have a special opening device. Specific products they mentioned included: dried fruits, prunes, potato chips, noodles, macaroni, spaghetti, pre-packaged vegetables, dry vegetables, all cellophane-wrapped cartoned products, soup mixes, cereals, garlic, bacon, fish, pretzels, popcorn, crackers, dates, raisins, peanuts.

Among drug-store items were mentioned tooth brushes, razor blades, Christmas seals, powder puffs, all

for tear tape



TRADE IDENTITY is provided by printing maker's name on tear tape for a convenient, economical wrap.



MULTIPLE UNITS of crackers now have another added convenience—a tearing tape to break open the individual units.

cigarettes, cellophane-wrapped medicines, drug bottles, tooth paste, candy bars, cigars. Baked goods mentioned included bread, cakes, cookies, rolls, doughnuts, cream puffs, cup cakes, buns—in fact all pastry in cellophane wrappers.

Such studies indicate the kind of package improvements consumers are looking for. They are asking for them because they have had trouble opening hundreds of cellophane packages. Any manufacturer who does not take these consumer preferences into consideration is losing a chance for additional sales—and particularly repeat business. How many times do you suppose a housewife, choosing between two competing brands of equal quality, is attracted to the brand on which she sees the colorful strip of tearing tape that provides the way to do away with broken fingernails, cut fingers and a bad temper?

Not all tear tapes, of course, are made of cellophane—and this is a point worth noting in the unlikely event that cellophane becomes unobtainable for this purpose. Machines could in many instances be adapted to tapes made of heavy kraft or coated paper, or a product known as "Ribbonette"—a tape comprised of parallel cotton yarns held together by a suitable bonding agent—which is used currently on heavy, laminated wrappers for which ordinary cellophane tape is not strong enough.

The Life Saver package is an example of this usage, but in this case the purpose of the tape is to break open the folds of the wrapper, not to remove them. Cotton-yarn tape is used as the opener on several slot-machine packages for chewing gum and certain confections. There are also tapes of plastic laminations, other than cellophane which have been developed. Metallic tapes have been used in certain instances as opening devices. Further development of special tapes might solve a number of difficult opening problems.

Some kind of tape might be developed as an opener on those tough, laminated-cellophane cheese packages for which ordinary cellophane tape is not sufficiently strong. An obstacle, of course, is the development of an attachment to high-speed cheese-wrap-





EXTENSIVE USERS of tear tape, and among the oldest, are chewing-gum manufacturers, both for stick gum and tablets. Similar applications have been adopted for small cartoned confections. Kraft Caramel pack shows application of tear-tape principle to small cellophane packages of separately wrapped candies overwrapped with card backing.



OVER-THE-COUNTER drug items requiring cellophane wrappers win endless customer good will when they are made easy to open with a cellophane tear tape.



PRODUCT VARIETY of uses for tape openings is shown by this group: cigars, cards, raisins and pocket-pack facial tissues. In tissue pack, tape is integrated with package design.

ping equipment for applying the opener. This should be a challenge to the cheese industry, particularly in view of growing consumer acceptance of packaged natural cheeses, as well as the processed varieties. It has been predicted that within a few years the old-fashioned wheel of cheese in the grocery store will be as out of date as the cracker barrel. As this evolution takes place, the most popular brands will be those that get there first with easy-opening packages that please the customer.

The use of easy-opening tape extends far back beyond the development of cellophane. In 1927, it is reported, a machine was built that wrapped a small vial of pills in paper. A piece of string was placed under the wrapper so that it could easily be torn off the vial.

From the foregoing, apparently cellophane need not be the only answer to providing opening devices for flexible packages and, should prolonged shortages develop, there could be many variations. The use of other materials might even be considered in new applications for which cellophane tape will not do the trick.

Advertising advantage

The user of easy-opening devices also has many advertising and promotional advantages. This is particularly true today when the visualization of easy opening can be featured so effecfively on television. One firm, Grocer's Cookie & Biscuit Co. of Detroit, an adroit exploiter of opening tape on cellophane-wrapped, tray-packaged Mama's Cookies, is featuring this innovation on TV with a "before and after" gimmick right in the show. The company claims it has increased sales of the cookies in the tear-tape package 35% since June 1.

The tear-tape cookies package came about while a Detroit sales manager for a leading tearing-tape supplier sat idly watching his television set one night and saw the cookie company's "Pat 'n Johnny" show with a pretty TV commentator telling about the delicious cookies, but slowing the show when she tried to tear open the cellophane package—just like Godfrey with a tea package. The sales manager went to the cookie company, which saw the problem in the same light and decided to do for cookie packages what some bakers have already done for cracker and bread packages.

Widths, thicknesses and colors

Cellophane tearing tape or tapes of other materials and string are applied by equipment which can be attached to many types of standard wrapping machines. In some cases the tapes may be incorporated as an integral part of a prefabricated bag.

Cellophane tapes are usually supplied on free-running, disposable spools in 1- and 2-lb. sizes, yielding about 2,600 yds. per lb. in $^{3}/_{32}$-in. widths. Widths available are $^{3}/_{32}$, $^{1}/_{16}$, $^{1}/_{8}$, $^{3}/_{16}$ and $^{1}/_{4}$ in. in at least six different thicknesses. These cellophane tapes may be obtained in a variety of colors, although the standard is red. Special colors must be ordered in minimum quantities of 500 lbs. for one shipment.

Colors, of course, have additional advantages in that they may be used for special identification and coding of packages. By changing the color of the tape, a manufacturer has a ready check on quality, inventory, turnover and other factors. Printed tape may also carry an advertising message or the maker's name as in the instance of Koester's rolls, shown in an accompanying illustration. In this case, the printed tape gives the identity of the maker so that it is not necessary to use specially printed cellophane for the wrap. Special colors, however, are difficult to obtain today, because of the tight cellophane situation.

Applying tear tape

To apply tear tape to a package, a special attachment must be installed on the wrapping machine. The attachment usually consists of an unwind spindle for the roll of tape, a small pot or bottle for applying either glue or solvent to the tape and a heated shoe for sealing the tape longitudinally to the cellophane as it is drawn into the wrapping machine. The attachment is mounted on the

wrapping machine between the roll of cellophane and the feed rolls. At the cut-off station, provision should be made to nick the edge of the cellophane on each side of the tape to assure proper tearing. A loose tab must also be left for starting the tear. This may be done by cutting out the heat-sealing plates over which the package passes to seal the bottom seal, leaving about ⅜ in. unsealed in the area of the tape. To function properly and actually remove one end of the cellophane wrap, the tape should completely surround the package. However, machines which cannot apply the tape in this manner can be used to position the tape from end-to-end fold. This method of application is sometimes advantageous for certain products and packages. Although such application does not function as a complete opening device, it provides a convenient slit for removal of contents. The small Kleenex package is an example of this type.

It must also be remembered that cellophane tearing tape should be applied in the grain direction of the cellophane. The grain direction is easily determined by holding the cellophane to the light to see the almost imperceptible striations.

For best results, tear tape is recommended for application on machines which feed the wrapping material at right angles to the longest dimension of the product to be wrapped so that the tape completely surrounds the package, such as a cigarette wrapper. Machines listed as suitable for application of the tearing tape are of this type. When considering tear tape, the whole problem should be worked out in cooperation with the maker of the tape and the machinery manufacturer. Where feasible, it is always best to start with a new machine, but often this is not possible and there are many cases where an attachment to the machine may be added with little difficulty.

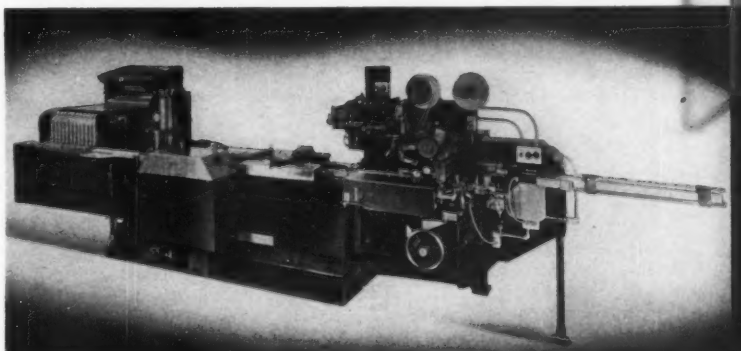
To obtain the advantages of tearing tape under ordinary circumstances, it is said, involves a very minor investment. The first cost is the application device on the wrapping machine. The only other cost is the cost of the tear tape itself, depending on volume, width and type of construction.

PHOTO COURTESY DUPONT



TWO INNER-TRAY OVERWRAPS with opening tapes provide new way to package cigars, presented as a theoretical suggestion by a leading cellophane manufacturer. Trays are planned to keep cigars fresh longer and to maintain full-appearing display as long as possible. With opening tape, dealer need waste no time in getting the boxes ready for selling.

CREDITS: *Cellophane tear tapes, The Dobeckmun Co., Cleveland, Ohio. (Also special acknowledgment to Dobeckmun for helpful information.) Jacob Laub's Sunbeam bread—waxed-paper wrapper, Pollock Paper Corp., Columbus, Ohio; Twin Pack wrapping machine, American Machine & Foundry Co., New York. Zesta individual-serving soda cracker packages—printed cellophane wraps, Shellmar Products Corp., Mt. Vernon, Ohio. Wrapping machines for both Zesta packages, Hudson-Sharp Machine Co., Green Bay, Wis. Wrapping machines for Koester Rolls and Mama's Cookie packages, Oliver Machinery Co., Grand Rapids, Mich. Wrapping machines for Kraft Caramels, Beechnut, Beeman's, Dentyne, Adams Black Jack and Schoenith gum, and for Stanback, St. Joseph's Aspirin and Tums packages—Package Machinery Co., Springfield, Mass. Wrapping machines for Ridley's Root Beer Drops, Smith Brothers Cough Drops, Pine Bros. Glycerine Tablets, Chiclets, Beechies, Fleers, Pure Candy Toys, Good & Plenty Licorice and Lafayette Mixed—F. B. Redington Co., Chicago, Ill.; Scandia Mfg. Co., Arlington, N. J.; and Package Machinery Co. Wrapping machines for Chooz, Phillies, U. S. Bicycle Playing Cards, Fewel's Raisins and Ray-Cuns—Scandia Mfg. Co. Chiclet wrapping machine (illustrated), F. B. Redington Co. Cellophane for all wraps, E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del., and Sylvania Div., American Viscose Corp., New York.*



CHICLET PACKAGES WITH TEAR TAPE were first made on this machine, installed in 1933, which feeds 12 Chiclets from a hopper and assembles them in two rows in a pocket of the intake conveyor. The carton is fed from a magazine, then expanded, the Chiclets inserted, the carton closed and filled, and cellophane wrapped by unit which applies the easy-opening tape to the wrap. Attachments for applying tear tape may be added to many standard types of cellophane-wrapping machines.



V-BOARD SPECIFICATIONS remain unchanged—among the few that have this distinction. The experience gained in World War II showed that these boxes can take the beating which is necessitated by open storage and rough handling of supplies.

Paperboard for the Armed Forces

TONS WILL BE GOING INTO RATION CARTONS BY END OF YEAR; FIBREBOARD INDUSTRY AWAITS EMERGENCY DEMAND FOR V-BOXES.

By J. D. Malcolmson*

In the early stages of the last war, untold millions of dollars worth of supplies were ruined by inadequate packaging. This time the military is going to be prepared ahead of time. Packaging has finally come into its own as a military essential.

Under the Department of Defense there is already a complete set-up of Packaging Coordination with separate packaging boards for the Army, the Navy and the Air Force. (See page 190.)

The Munitions Board, which is directly under the Secretary of Defense, last March appointed a Packaging Industry Advisory Committee consisting of prominent representatives from all branches of packaging and shipping.

This advisory committee was appointed not necessarily to create definite packaging specifications, but to act rather as a "supreme court" to coordinate the results of all the other activities in this field, to settle controversies, to prevent duplication and in every way to promote the interests of Government packaging, especially in the event of war.

Further recognition of the importance of packaging to the military is the announcement that the Society of Industrial Packaging & Materials Handling Engineers has changed a "Government Packaging Review" at its 5th Annual Exposition to "*Military* Packaging Review" in Philadelphia, Oct. 10, at which officers will be present from the Air Force, Army Ordnance, Navy and Army QM.

The Packaging Institute also announces a last-minute change in plans to include "Packaging Problems Arising from a National Emergency" in its Annual Forum, Oct. 23–25.

In spite of this growing awareness of the necessity for preparedness, however, the Korean situation came so suddenly that it is impossible at this writing to detail all the paperboard requirements it will entail.

Time was when every packaging man had a complete filing drawer full of World War II military specifications. Then came "peace," the "specs" were out of date, took up too much room and were finally thrown out.

Now we're going to have to start a new collection. This is not easy, because the present emergency hit the paperboard industry before the military had time to carry out its contemplated unification of specifications.

Therefore, instead of working with the new long-promised MIL specs, much work must still be done to collect data from all branches of the Armed Forces, using the present JAN specs as a welcome step in the right direction.

Folding cartons

Tens of thousands of tons of paperboard will be in demand for small ration cartons by the end of the year. Although information on carton

* Director, Products Development Dept., Robert Gair Co., Inc., New York City.

requirements is scanty at the moment, we do hear that the famous (or infamous!) ration K is no more. It has been replaced by the new Combat Ration or C ration (more accurately defined as the C-4 ration), which is now being used for our military forces in Korea. (See p. 98, September issue.)

Apparently, the C ration falls between the old K ration and the famous 10-in-1 ration, so that it involves both inner and outer packaging.

It is claimed to be much more appetizing than the World War II product and consists of six different one-day menus for one man, packaged together in small cartons within a single outer container weighing 40 lbs.

The new C ration will supply a six-day variety of nine different bread unit assemblies.

Included in the C-4 ration are many small tins equipped with tiny can openers, as well as sterile wrapped plastic spoons and the usual complement of cookies, crackers, coffee extract, cocoa, matches, cigarettes and candy.

Detailed packaging requirements for C rations are being prepared by the Chicago QM Depot, 1819 W. Pershing Road.

For the individual soldier, the QMC has developed an "assault food packet" to be carried into action. (See p. 98, September issue.)

At last reports this was not yet in production and therefore is not yet being used in Korea, but assurance has been given that it will be much more attractive in the front lines than the old ration K packet. This is because the menu of the new ration will consist of eight different appetizing varieties.

Also being developed is a "survival ration"—a near-starvation diet for keeping stranded soldiers, sailors and airmen alive while waiting to be rescued. For these, too, tremendous quantities of paperboard cartons will be required.

From a paperboard packaging standpoint, the two most interesting ration developments are the 40-lb. C-4 package mentioned above and the new 5-in-1 unit which supersedes the wartime 10-in-1 ration. This latter assortment is designed for feeding small groups of soldiers without access to field kitchens and is somewhat similar to the C-4 in that it contains a variety of new canned-food items. It weighs 25 lbs. and is already being used in Korea. Outer containers for these new rations are made of V-board.

V-board boxes

At the end of World War II, the fibre-container industry was producing about 60 million V-boxes monthly (about 110 thousand tons). Most of these were solid fibre—about 80% by weight—the balance being corrugated.

The experience that was gained by the Armed Forces and the box makers resulted in such a satisfactory product that V-board specifications[1] remain unchanged today—among the very few specifications that have this distinction.

Another proof of the value of V-board protection has just come from a QM official who states that they recently opened a supply of rations which had been stored in Germany since World War II. The outer V-boxes, the inner containers and the rations themselves were all in excellent condition.

[1] Specification JAN-P-108.

V-board is defined as a container material that will withstand immersion in water for 24 hrs. without disintegrating and still retain satisfactory strength. It does not keep water from the contents.

The details of V-board construction will be found in JAN-P-108 with three amendments. The specifications of V-board and its companion, W-board—a waterproof board used mostly for interior packing—are shown in the accompanying table.

A modified form of V-box known as the VUS container has also been developed by the fibre-container industry for commercial export shipments. This development has been thoroughly described.[2]

Fortunately, the Armed Forces have continued to purchase V-boxes since the end of the war so that the "know how" and production facilities are functioning and ready for any immediate increase that may be needed in tonnage demands.

Probably 3,000 or 4,000 tons of solid fibre V-board are normally being produced monthly. During the first

[2] See "The New VUS Weatherproof Box," MODERN PACKAGING, Jan., 1948, p. 88.

THE SAME PROBLEM AGAIN—over almost impassable mountain trails, through swamps and pouring rains, packages of supplies must not fail.

PHOTOS COURTESY SIGNAL CORP.



TABLE I— REQUIREMENTS FOR V-BOARD AND W-BOARD EXTERIOR AND INTERIOR GRADES

Type	Grade	Compliance symbol	Corrugated fibreboard; nominal caliper of paperboard[1] Outer liners	Inner liners	Corrugated material[2]	Solid fibreboard nominal caliper[1]	Minimum average bursting strength Dry	After 24 hrs. immersion	Maximum permissible ply separation (wet)
					Exterior grades				
			In.	In.	In.	In.	Lb.	Lb.	In.
SF	1	V1s	...	...	...	0.100	750	500	1/4
SF	2	V2s	...	...	...	.090	550	500	1/4
SF	3	V3s	...	...	...	.090	400	150	1/4
CF	3	V3c	0.023	0.023	0.010	.....			
					Interior grades[3]				
SF	5	W5s	...	...	...	.075	275	100	1/4
CF	5	W5c	.016	.016	.010	.....			
SF	6	W6s	...	...	...	.060	175	50	1/4
CF	6	W6c	.010	.010	.010	.....			

[1] A 5% minus and unlimited plus tolerance is permitted.
[2] Corrugations shall be "B" or "C" flute having approximately 50 or 42 flutes per ft., respectively.
[3] Corrugated or solid fibre boxes meeting all requirements of this specification except water resistance and wet bursting strength may be used as interior containers only if individually protected with a sealed bag or sealed wrapper of waterproof barrier material meeting requirements of JAN-P-125.

half of 1950 this tonnage was divided about as follows:

V1s	negligible
V2s	10%
Vus	20%
V3s	70%
W5s	negligible
W6s	"
	100%

Corrugated V-board is produced in relatively small amounts during peace times, but in an emergency production of this grade could account for at least 20,000 tons monthly, the figure reached on V-E Day.

Not all the V-board and VUS board made during the past few years went to the military. Many commercial users have found this extra-strength board to be excellent for export shipments and even for multi-use domestic movements of such items as bottled beer and milk.

Box requirements

The Chicago Quartermaster Depot has informed box manufacturers that the Armed Forces' requirements for weatherproof fibre boxes (mostly solid fibre, but including some corrugated) for the final four months of 1950 will be increased to 65,000 tons, or at a rate of 16,000 tons per month.

This is a sharp increase from recent requirements, running about 3,000 tons per month, and represents nearly 4% of current board production capacity.

According to Brig. Gen. Everett Busch, commanding general of the Chicago Quartermaster Depot, the boxes required will be mostly V2S types or V2S with sleeves. The boxes with sleeves are used for rations, components and canned goods, among other items. Also in use will be V3S, V3C and other types of weatherproof boxes and, in addition, the Armed Forces will use substantial quantities of domestic types of containers.

Also required by the end of 1950 will be about 2,000,000 folding cartons of various sizes and styles, and about 500,000 set-up boxes, plus substantial quantities of fibre cans and tubes and fibre drums.

Many emergency shipments to Korea consist of domestic corrugated or solid fibre containers overpacked at the last minute in V-boxes or wood. The Armed Forces learned, however, from the last war that this is an expensive expedient and the practice will be held to a minimum. QM plans for the rest of 1950 call for very great increases in V-box consumption.

The importance of paperboard in military packaging is indicated by the following table taken from WPB releases[3] which shows that at the height of World War II (first half of 1944) 77% of all board went into direct or indirect war uses:

	Class I Direct war	Class II Indirect war	Class III Civilian maintenance
Container board			
Folding boxboard	19.9	58.3	21.8
Set-up boxboard	18.4	27.4	54.2
Cardboard	30.4	26.9	42.7
Building board	52.4	43.1	4.5
Other	54.8	10.9	34.3
Total	50.2%	27.1%	22.7%

Vapor-phase inhibitor

Probably most packaging men know that the initials "VPI" stand for "vapor-phase inhibitor," which is not very much more enlightening than the initials. Surface treatment of paper known by this designation, however, is very valuable for preventing corrosion on metal parts—not all metals, but chiefly ferrous ones. The treated paper can be laminated to board to form satisfactory folding cartons or containers which then become efficient corrosion inhibitors. The Armed Forces are now working on a MIL specification for VPI and its use should be a valuable aid for many types of military packaging.

In the paperboard industry we are glad to report that the Armed Forces are now keenly aware of the importance of packaging and that if full-scale war threatens, the military is going to be ready. Someone has said that the package is the last thing thought of by the shipper but the first thing seen by the customer. Now it's going to be one of the first things to be considered by the Government. Packaging is now definitely assured of top-ranking importance in America's Armed Forces.

[3] *Official Board Markets*, Aug. 5, 1950.



SQUARE BULK PACKAGE for ice cream increases existing storage space by 40%. Two $3^1/_2$-gal. squares fit in space formerly filled by two $2^1/_2$-gal. rounds. Die-cut handles eliminate metal lifts, reduce handling time.



SPECIAL INTERLOCKING FLAPS in the bottom simplify setting up of carton. Separate base piece provides additional support.

Bulk-cubed ice cream

NEW, EFFICIENT FIBREBOARD SHIPPER INCREASES SALES AND DECREASES PER-GALLON CONTAINER COST FOR WESTERN ICE-CREAM MANUFACTURERS

The past 11 years have seen a rise of 80 to 90% in ice-cream consumption—an indication of its increasing importance as a year-around basic food. Keeping pace with this rise, the industry has been constantly seeking for increased efficiency in storing and handling methods. Better storage cabinets have been introduced as a result of refrigeration research and from time to time new packages have appeared.

During the past 12 months, the Holland Ice Cream Co., Vancouver, B.C., and the Alpine Dairy Co., Seattle, Wash., have conducted extensive tests with a new square fibreboard container for bulk ice cream. Both companies report the success of the package in reducing and simplifying handling operations, in offering greater sanitation and in providing maximum utilization of storage and trucking space. Alpine reports that use of the new container has resulted in greater volume sales, a per-gallon savings on container costs, 9% less truck-loading time and an additional load capacity of 60 gal. per truck. But the main feature is that storage in the plant and in retail outlets can be increased by 40% without a capital investment.

The square containers were developed by one of the leading container companies to dispense with the metal lifts needed in handling the round containers. Die-cut handles in the top flaps of the folding carton offered a simple solution. Then the square shape suggested itself. The $3^1/_2$-gal. size was chosen on the basis of comparative tests carried out by the participating companies. The new size and shape fulfilled all expectations and at the same time increased sales.

The square containers measure $8^7/_8$ in. on all sides. They are made of 275-lb. unbleached kraft with a special wax-impregnated lining of bleached kraft. A special baseboard of the same material as the liner is inserted before filling to eliminate excess pressure on the interlocked base flaps. The containers are delivered knocked down in bundles of 25, thus taking up little warehouse space.

Package behavior on the filling line is standard. An operator, keeping an eye on the filling apparatus, checks the corners for a complete fill and smooths the top surface for easy closure. The top is then interlocked by the operator to prevent freeze bulge and insure maximum sanitation. This closure is said to be more sanitary than single disks in round containers. Although filling requires a few seconds longer, due to increased capacity, the time lapse is utilized for setting up other containers. At the Alpine Dairy Co., the time required to fill 40 of the square containers from a 150-gal. freezer is about one hour. Moving on an automatic conveyor, the square bulks are taken to Alpine's sharp room for hardening, where the square shape facilitates stacking. A few more minutes are required for hardening because of the shape, but more gallons can be stored in less time and all storage space is utilized.

For small retail outlets without soda fountains, space conservation is important. Where two units of the $2^1/_2$-gal. round containers filled the storage cabinet, two square bulks with a total capacity of 7 gal. will fit into the same space.

The Alpine company re-ordered 50,000 squares in April following six months' experimental fills. This company reports that since its introduction in November, 1949, 35% of its customers regularly order the square and almost as many order mixed squares and rounds. According to Alpine, only an estimated 5% of the distributors have old cabinets which cannot accommodate the new packages.

CREDIT: *"Shainwood" containers developed and supplied by California Container Corp. Div., Container Corp. of America, Seattle, Wash.*



PAUL REVERE PORRINGER, reproduced in silver-plate, is shaving-soap container. All items are in boxes carrying Currier & Ives prints.

IVORY CHESS BOX, once belonging to Thomas Hicks, an early Mayor of New York, was the inspiration for a paperboard box used as a combination package for the eagle flask and porringer.



FAMOUS EAGLE FLASK, known to every collector of American glass, has been reproduced about 1/3 the size of original for Currier & Ives after-shave lotion.

Museum pieces

Every container is a collector's item in the new Currier & Ives line currently being introduced by the J. B. Williams Co.—an authentic reproduction of a famous museum piece, representative of the best and most prized in Early American craftsmanship. Each one is a striking example of modern container manufacture, showing how the fine artistry of the old may be combined with the machine-production techniques of today in the hands of a leading designer and with the cooperation of a company which is desirous of making each package in the line a thing of beauty.

The new line gives J. B. Williams, makers of soap and men's toiletries since 1890, an opportunity to widen its market in the luxury toiletries field and to win a conspicuous place among the quality lines of men's toiletries that are usually bought as gifts by women.

The present Currier & Ives line has come into being as the result of a packaging idea the company adopted just before the war when it introduced a ceramic shaving mug and wooden bowl carrying reproductions of Currier & Ives prints.

When a decision was made to develop a complete quality gift line, however, both the company and its advertising agency wanted something different in packaging that would truly express the quality of the line. The previously used Currier & Ives theme quite naturally turned the thinking in the direction of Early Americana. With the cooperation of a leading design consultant came the idea of reproductions of famous museum pieces. Here would be something to please the shopper and to provide time-tested beauty of form and decor.

The result is a collection of six packages so far: after-shave lotion in an adaptation of the well-known eagle bottle; shaving soap in a Paul Revere porringer; after-shave powder in an 18th century silver caster, the original of which was made by Jonathan Otis; hair dress and liquid deodorant in reproductions of 18th and 19th century cologne bottles, and a combination package holding the eagle bottle and porringer in a box designed after an ivory chess box which once belonged to Thomas Hicks, last Federal mayor of New York (circa 1794).

The packages are designed for pricing as follows: the porringer package selling at about $5, the after-shave lotion eagle flask package for $2 and the combination of the two in the ivory-colored chess box at around $7.

Originals of all the containers are in the Metropolitan Museum in New York, the Museum of the City of New York and the Philadelphia Museum of Art.

Permission first had to be obtained from the museums to use the designs. Then came the problem of reproducing by modern methods containers which would have the handcraft look of the originals. Through close cooperation of the designer with the suppliers, a remarkably near-original look has been achieved in all cases.

In the case of the eagle flask bottle, which incidentally has been repro-

duced in a size about one third that of the original, it took several cold runs to get the desired hand-hammered effect in the mold and an eagle design which looked graceful and not too sharply finished. The slightly iridescent effect of antique glass was finally obtained by the use of a transparent spray-coat baked on the bottle. The problem of retaining a hand-made irregular look to the bottle neck and at the same time maintaining close tolerance for the closure also had to be solved before the job was finished. Similar problems were encountered in developing the reproductions of the wine-red velour paper to provide a rich setting for the porringer package and the after-shave lotion flask.

Closures on all the bottles are brass to give an antique feeling. A carefully tested liner provides a tight seal. Bottle labels are kept small so that the beautiful contours of the glass are not interrupted by excessive identification. Tie-on neck tags, in each case, describe the container reproduction and are hand lettered on antique stock to resemble the kind of hand-set printing and type decoration used during the 18th century. For example, the eagle flask package carries the following copy on the neck tag: "A genuine reproduction of an Eagle Flask (circa 1838) in the collection of the Philadelphia Museum of Art." The porringer is identified by printing on a thumb-tabbed paperboard disk which fits inside the container over the shave soap.

Each of the items is individually packaged in a set-up box of suitable size. All the box covers are printed in gold and black showing a black and white reproduction of a Currier & Ives print, selected from the large collection of Currier & Ives originals J. B. Williams Co. has in its possession at the home office in Glastonbury, Conn.

The Currier & Ives line was pretested in late May and early June, timed for Father's Day, in and around Greenwich, Conn., and was supported by local newspaper advertising. The enthusiastic reception quickly decided

(*This article continued on page 193*)

REPLICAS OF FAMOUS GLASS AND SILVER BRING THE BEAUTY OF EARLY AMERICAN CRAFTSMANSHIP TO MODERN LINE OF MEN'S TOILETRIES

two cologne bottles and also in obtaining the correct blue color in the batch for these bottles so that they would resemble more closely the blues used for the originals.

The porringer and powder-shaker containers are being made by a leading silverware manufacturer and both are good quality silverplate. At one stage of the planning, consideration was given to making the containers of pewter in the belief this might be more economical.

The scarcity of tin in the United States led the designer to investigate the possibilities of making pewter containers in England. After considerable study, however, it was found that the most economical containers and those of best craftsmanship were the ones made of silverplate by an American silverware manufacturer. In making the silver containers the greatest pains were taken to turn out dies that would give the best possible effect of hand finish to the pierced designs for the handles of the porringer and the shaker top of the caster.

The original chess box was ivory veneer and wood construction. The J. B. Williams reproduction is a paperboard box covered with ivory stock. The interior platform is covered with



POWDER SHAKER, measuring about 5-in. tall is a replica of a silver caster now in the American Wing of the Metropolitan Museum, originally made by Jonathan Otis.

18TH CENTURY COLOGNE BOTTLES were selected as the designs for containers for Currier & Ives hair dress and deodorant. Both bottles are blue glass. The colors of the modern glass are as near like the originals as it was possible to obtain by modern glass-making methods.



Packaging's Hall of Fame



WRIGLEY'S CHEWING GUM

TWENTY-SECOND OF A SERIES

Few products are as universally available as chewing gum—a 5-cent item that is sold by approximately 1,500,000 miscellaneous retail outlets all over the U. S. It is estimated that in the United States alone, which leads the world in per capita consumption of this popular product, expenditures for chewing gum run more than $200,000,000 per year. Translating this total into physical terms gives us the somewhat astronomical figure of some 20 *billion* sticks of gum sold each year. Even in the unchewed state, this amount of gum would extend around 950,000 miles, sufficient to girdle the globe more than 38 times.

Packaging such a volume of gum constitutes a real problem, for chewing gum is a sensitive product which must be properly protected if it is to reach the consumer in the full bloom of its flavor and freshness. Particular attention must be paid to the effect of air and moisture. If the product dries out between the production line and ultimate purchaser, it becomes brittle and "flat." Moisture absorption, on the other hand, produces a flabby, sticky gum devoid of taste appeal.

History records that an exiled Mexican general, Santa Ana, brought chicle, the "chew" of the first modern-type chewing gum, to the United States about 1860 and that Thomas Adams, a spare-time inventor, first sold the product commercially. John Colgan, a Louisville druggist, made a further contribution when he added flavoring. But it remained for William Wrigley, Jr., to put chewing gum in the big leagues of merchandising by advertising and selling the product aggressively and sponsoring improved production and packaging methods.

So far as packaging is concerned, it will be to the everlasting credit of Wrigley's that it was, from all accounts, the first company in any field to recognize the great consumer-convenience value of the package-opening cellophane tear tape,* which made its appearance on Wrigley's Spearmint in July, 1932.

On the basis of this packaging "first" alone, Wrigley's gum easily qualifies for nomination to Packaging's Hall of Fame. However, there are additional reasons. Not the least of Wrigley's packaging achievements was the development of its own ingenious packaging machinery, which within a few seconds wraps the individual sticks of gum, assembles them in groups of five within a unique three-ply wrapper and places 20 such packages in a tray-type counter display carton, ready for a cellophane overwrap.

Chewing gum is one of the very few products you can think of that still sells at its pre-World War I price—five sticks for a nickel—and Wrigley's aggressive merchandising policies have been instrumental in holding the line on this item throughout the years of inflation.

The Wrigley background

The Wrigley story has Horatio Alger overtones. Young Wrigley's business career began at the tender age of nine, when he sold soap from his father's factory on the streets of Philadelphia. Enthusiasm and natural sales ability won him a promotion to traveling salesman at 13, but soon his mind was set on bigger things. Moving to Chicago in 1891, with $32 in cash and an ambition to start a business of his own, he continued to sell soap but added baking powder to his line. In order to persuade jobbers' salesmen to handle this new item, Wrigley devised a combination offer providing two packages of chewing gum with each can of baking powder. It soon became apparent that the trade was much more interested in gum than in baking powder.

At that time, there were already a

* See also "Wanted: More Tear Tapes," p. 93 this issue.

UNIQUE in advertising history was this billboard campaign which promoted an empty Wrigley's wrapper during 2½ years of World War II when the regular Wrigley's brands of gum were off the market. The public didn't forget; sales bounced back immediately to new record levels.



NOMINATED FOR PACKAGING'S HALL OF FAME BECAUSE:

- **Leader of a $200,000,000 industry, its 19-component package for a 5-cent product exemplifies protective packaging at its best.**
- **It was the first in all packaging to use the cellophane tear tape for opening convenience.**
- **The company developed machinery among the fastest and most ingenious known to packaging.**
- **Trademark impact is such that the famous wrapper wasn't forgotten despite a 2½-year wartime absence from the market.**

dozen or more firms in the chewing-gum field, but Wrigley felt there were much greater opportunities for this relatively unknown product. During the latter part of 1892, he began selling brands of gum carrying his own labels. Two of these early brands—Juicy Fruit and Wrigley's Spearmint—have carried through to the present time, but most of the others have long since been eliminated. Among them were Vassar, Sweet Sixteen, Lemon Cream and Blood Orange, to mention only a few.

Mr. Wrigley had a firm belief in the power of premiums. Whereas he had formerly used gum premiums to stimulate sales of baking powder, he now turned to the use of other premiums to promote sales of gum. These were not consumer premiums, such as are offered with many products today, but were offered to the retailers, jobbers and jobbers' salesmen to encourage them to stock Wrigley's brands of gum.

Wrigley premiums ranged from dishes, rugs, chairs, kitchen utensils and coffee mills to mandolins, cuspidors, revolvers and cologne. Some of the first fountain pens, cameras and gramophones went to jobbers' salesmen with orders for Wrigley's gum. Safety razors were offered as a Wrigley premium four years before Gillette went into business.

Company records indicate that Mr. Wrigley's decision to market a spearmint gum dates from late in 1893 or early in 1894. He had always been fond of the flavor himself and felt that others would enjoy it if given an opportunity to try it. Many years later, Mr. Wrigley said that he had never seen or heard of any other spearmint gum at the time he first conceived the idea of putting out this flavor, although he was familiar with the use of spearmint as a perfume for soap and could remember his mother giving spearmint oil to babies with colic.



EACH STICK of Wrigley's Chewing Gum carries a foil-tissue wrapper, plus the printed sleeve, while the outer sealed package is made up of printed cellophane, aluminum foil and waxed paper, plus the opening tear tape—a total of 19 pieces of material in all, to do a superb job of flavor protection for a product that sells for only 5 cents.

The familiar Wrigley spear, widely used by the company in its packaging and advertising, had its origin when the style of label for the new Wrigley's Spearmint flavor was worked out. Several proposed designs were prepared by an artist, all of which included as the essential feature a spear running through the word Spearmint. Not satisfied with any of the preliminary designs, Mr. Wrigley seized a piece of paper and made a rough sketch showing the lettering on the enlarged shaft of the spear. The wrapper was printed in red and green on a white background.

The year 1907 witnessed a financial panic which caused most business firms to curtail their activities. Wrigley, however, reasoned that it was an excellent opportunity to win new customers. Acting against the advice of skeptical salesmen and merchandisers who insisted that the spearmint flavor would not appeal to the public, the company launched a concentrated ad-

vertising drive which began in New York and was soon extended to other cities. Its "Look for the Spear" message blossomed out on billboards, car cards and in every widely circulated newspaper in the country. The famous Wrigley slogan, "The Flavor Lasts," was also pounded home during the all-out drive.

Within three years, Wrigley's Spearmint had become the largest-selling brand of chewing gum in the world and the Wm. Wrigley Jr. Co. was established as a major factor in the business. Following a merger with the Zeno Manufacturing Co. in 1911, the company began to manufacture its own gum and two years later the first unit of its present main plant was built in Chicago's Central Manufacturing District. Successively enlarged through the years, this plant now contains more than 800,000 sq. ft. of manufacturing space.

Two basic principles have governed the company's operations from the outset—a steadfast belief that fine quality is important in even so small an item as a stick of gum and a policy of consistent, honest advertising to win new customers. As the scope of its operations increased, additional factories were established in Canada, Great Britain, Australia and New Zealand. While the U.S. has always been the most important market, Wrigley products have long since become familiar in most of the countries of the world. With the death of the founder in 1932, the business came under the leadership of his son, Philip K. Wrigley, who had established the company's Australian factory in 1915 and had become president of the company in 1925.

It is unusual that the Wrigley company has concentrated its manufacturing and merchandising efforts on four brands—Wrigley's Spearmint and Juicy Fruit, which date from the company's early days; Doublemint, introduced in 1914, and Wrigley's P. K. chewing gum, a candy-coated gum in pellet form, launched in 1921. Wrigley officials feel that by limiting the line to these four major brands, the company can do a more effective merchandising job.

Evolution of package

All Wrigley packages now employ the same basic construction, including the three-ply outer wrapper which was introduced in 1940 after four years of research and testing. In these packages, which are described more fully later, the quality of each stick of gum is guarded by six different layers of wrapping material, plus the added protection of the 20-package counter display boxes (cellophane overwrapped) and the shipping cases in which the gum reaches the trade. A consumer who would take the time to unwrap an entire package of Wrigley's gum would discover that there are 19 individual pieces of wrapping material used in the making of each five-stick package, including the three-ply outer wrapper of printed cellophane, wax paper and aluminum foil.

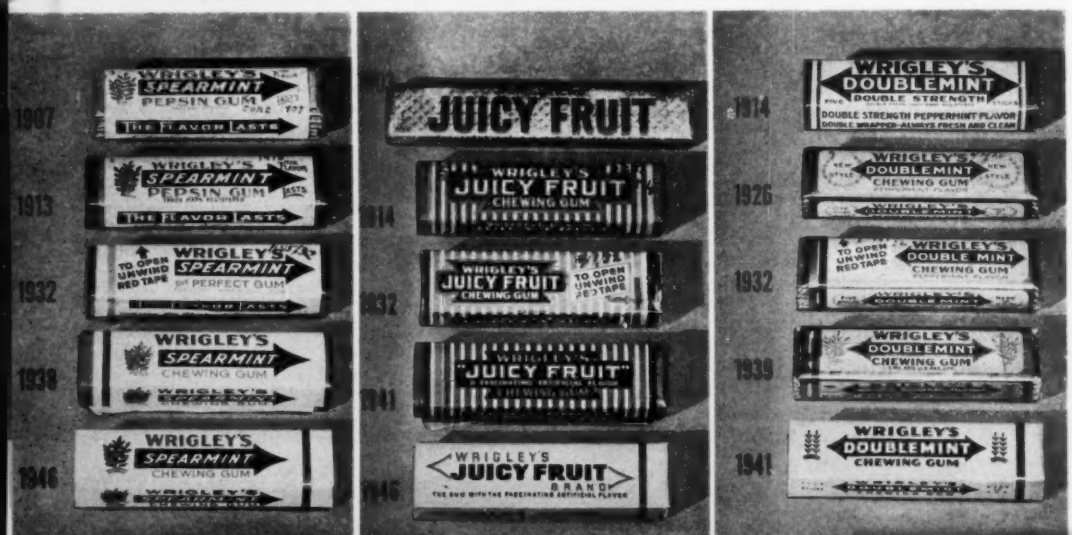
Both in appearance and construction, the early Wrigley packages were a far cry from today's streamlined versions. The 1903 Juicy Fruit package, for example, consisted of a "long bar" pack of two sticks, measuring 3¾ in. long as compared to the 3-in. length of the modern package. Both sticks were scored into six bite-sized portions and the bar was wrapped in lead foil with a waxed-paper backing. Printed in red on the top of the package were the words "Juicy Fruit," while the sides bore the statement, "Purifies the Breath." This style of pack was supplemented in 1914 by the five-stick pack and later discontinued as the public indicated its preference for the latter.

The design of the five-stick package featured green and white stripes en-

CONSISTENT in design elements, Wrigley's Spearmint wrap in red, white and green always featured spear trademark, but package construction steadily improved. Foil stick wrap and tear tape was adopted in 1932; three-ply outer wrapper, in 1940.

EARLIEST package in the Wrigley's archives, the 1903 Juicy Fruit shows an early appreciation of foil protection. First "long-bar" pack of two thick, scored sticks was wrapped in lead foil with waxed paper background. Complete break with striped design was made with yellow wrap in 1946.

DISTINCTIVE double-end spear has always identified Wrigley's Doublemint and from the start the label featured "double wrapping" to protect the "double flavor." Since 1926 Doublemint wrap has had green background to distinguish it from other two stick brands. In 1941 it was first to appear in the new over-all sealed package.



circling the paper band, with the words "Juicy Fruit" on a blue Maltese cross at the center of the pack. For a number of years, pink waxed paper was used for the wrapping of the individual sticks, being replaced by foil about 1930. In the early part of World War II, curtailment in the use of foil resulted in a temporary return to pink waxed wrappers on the individual sticks of Juicy Fruit. When Doublemint was introduced in 1914, the wrapper used the same color scheme as Wrigley's Spearmint—red and green on a white background—with a double-end spear instead of the single type used on Wrigley's Spearmint. In 1926 an entirely new design and color scheme were adopted for Doublemint, featuring a light green background with printing in red, dark green and gold.

In general, Wrigley package design provides a valuable study in increased simplification, family identity among the different brands and the use of colors which, while distinctive, complement one another in mass display. At the same time, of course, package elements have been altered periodically to bring them into conformity with prevailing trademark and labeling requirements. Around 1940, when the new three-ply outer wrapper was brought out, a broad program of package design revision was initiated. Doublemint was the first brand to appear with the new treatment, but the entire program was soon deferred because of the war. In 1946, after a war-enforced absence, Wrigley's Spearmint again reached the civilian market in a new design, basically similar to that in use before the war but simplified and modernized. Then came the completely new package design for Juicy Fruit (see p. 106) and later P. K. Chewing Gum appeared for the first time in a laminated cellophane, waxed paper and foil wrapper, featuring a red, white and black color scheme.



ONE OF BATTERIES of high-speed packaging machines, of Wrigley's own design, which handles the company's huge output of stick gum. These machines wrap each stick, apply the laminated outer wrap and fill the 20-package tray cartons. Details of the machine are Wrigley top secret.

MODERNIZATION STEPS are apparent in the sequence of packages shown in the photograph below for P.K.'s, Wrigley's candy-coated gum. The trade name came from the slogan appearing on gum's first package: "Packed tight, Kept right."



The postwar package adopted for Juicy Fruit, which along with the other standard brands had been off the market more than 2½ years due to wartime material shortages, marked the sharpest break with earlier Wrigley packages. The new design, featuring a yellow background in place of the former green and white stripes, was test marketed in one city early in 1942, but due to war conditions the change-over was deferred until 1946. In order to acquaint its sales representatives with the reasons behind this change, a detailed bulletin was sent out in October, 1946. The bulletin is of interest because it reflects some of the basic packaging concepts of the Wrigley organization, as indicated in the following excerpts:

"The subject of color can never be cut and dried, for personal preference generally enters into it—subconsciously, if not unconsciously. And it is the job of the designer to look at colors objectively and to know their values, as to what colors go together or complement one another. The Juicy Fruit color was developed, not to stand out by itself so much as to be displayed side by side with Doublemint and Wrigley's Spearmint. . . . If you will visualize the white Wrigley's Spearmint package, the light green Doublemint and the light yellow Juicy Fruit in a display together, we believe you will realize that each of these three colors does something for the others in a mass-display impression. The choice of red and blue lettering, and the exact shade of each, was developed with this same idea in mind. . . .

"Secondly, whenever creating new package designs we don't think of the package just by itself, but take into consideration how the package will appear in our advertising. For example, this was not taken into consideration in the old days with the original Wrigley's Spearmint and Doublemint packages and, therefore, when we had to show these packages in black and white ads where color was not possible, the two packages looked almost identical. . . . The new spear design on Juicy Fruit takes care of both these points. The outline of the spear gives the subtle design relationship to the Wrigley's Spearmint



INSPECTORS who examine each tray have an intercom system for instant communication with the wrapping-machine operators. After operators have inspected them, each of the trays is then overwrapped with cellophane.



FOR SHIPMENT, the 20-package counter cartons are packed in counts of 50 in extra-strength, printed corrugated cases.

and Doublemint spears and because it is an outline it won't be confused with the Doublemint spear design in black and white ads. For even though one spear is higher than the other on the Juicy Fruit design, if the spears were a solid color the Doublemint and Juicy Fruit packages would look very similar in a black and white ad."

The current line of Wrigley packages and boxes marks the culmination of many years of research and development to meet an objective summed up in these words by Philip K. Wrigley, now chairman of the board: "We think we turn out a swell piece of chewing gum at the factory and we want that gum to get to the consumer in the same wholesome, full-flavored condition as when it is made." Mr. Wrigley has personally directed the company's packaging program for a number of years.

Package construction

In the package construction used by Wrigley since 1940, the five-stick wrap carries the trademarks and all other label information printed on the inner surface of the cellophane surface ply, which gives the wrap sparkling eye appeal and also protects the printing against scuffing or soiling. Next comes a layer of 35-lb. base paper waxed on both sides, bonding the printed cellophane to a sheet of 0.00033-in. aluminum foil, which forms the inside layer of the wrap. Each of the five individual sticks of gum is further protected by a two-ply wrap of waxed paper and foil, enclosed by a paper sleeve carrying the printed label in odorless inks. The "display" side of the individual stick band matches the outer package in color and design for each flavor. Instructions on the stick wrapper urge the user to "Keep wrapper to put gum in before throwing away." This laudable suggestion appeared on Wrigley wrappers as early as 1933.

Component parts of the Wrigley inner wraps and packages come from several different supply sources and are actually fabricated into their final form on the specially developed wrapping equipment used by the company. In the initial single-stick wrapping operation, the aluminum foil and light-weight tissue are combined and placed around the gum before application of the printed label, consisting of machine-finished paper. In the application of the five-stick wrapper, the two-ply combination of printed cellophane and waxed paper is adhered to the aluminum foil to form a three-ply wrapper.

Wrigley's introduction of the opener tape on the outer package—the first use of this feature on any product having a cellophane wrapper—came in 1932. It was originally located on the left end of the package but later was shifted to the right for added convenience.

It was in 1931, when cellophane wrappings were being developed for various products, that the Wrigley company took an interest in this means of securing added protection and display value. When the possibilities were being studied, the late William Wrigley, Jr., was shown some cellophane-wrapped packages. He picked up one of the packages, examined it and attacked it with his fingernails. "It's fine," he said. "But where is the can opener to get it open with?"

This statement epitomized a Wrigley policy of making everything about the product and package as convenient as possible for the consumer and although Mr. Wrigley passed away in January, 1932, the company held to this policy and Wrigley brands of chewing gum were not brought out in cellophane until a way had been found to build the missing "can opener" into the package.

A tear tape proved to be the answer to the problem and in July, 1932, the new package feature made its market debut with an intensive merchandising and advertising campaign in the state of Georgia. Wrigley's Spearmint, the company's leading brand, was featured in this campaign, although the tear tape was also placed on the other Wrigley packages.

Originally, it had been planned to convey opening instructions to the public solely through advertising and by means of directions on the counter cartons of gum. However, the company decided to make doubly certain that customers understood the new package feature and, accordingly, prominently printed directions, "To open unwind red tape," were placed on both the front and back of the package, with a red arrow pointing in the direction of the exposed tip.

Commenting on the introduction of the new package construction, Philip K. Wrigley stated: "We don't think that our product in itself is any better because it has a new type of wrapper. The new package, of course, makes

possible better preservation of the flavor. But it is the flavor itself that interests and influences the consumer in buying our gum and it is around that point that we are building the advertising. We refer the consumer to the qualities of the famous flavor and then point out that it is kept right in this new package."

Although tear-tape openers have now been adopted by most gum manufacturers, as well as makers of cigarettes, candy and a host of other products, the opener on the postwar Wrigley package is of unique construction. Actually, the red stripe which the consumer sees at the end of the package is not the opener tape itself, but a stripe printed on the outer cellophane to indicate the presence of the tape directly beneath, adhered to the underside of the foil ply. This stripe ends in a rounded tab extending slightly over the end of the package, making it easy to grasp between thumb and index finger. When the tab is held and unwound along the red stripe, the concealed opener tape goes into action. Through the tearing produced by the tape in the unwinding process, a small "cap" is readily removed from the end of the package, affording ready access to the individual sticks. This construction produces a neat package and assures a complete seal of the wrapper until deliberately opened.

Packaging operations

In the Wrigley plant, chewing-gum manufacture is carried out in 150-gal. mixers, where corn syrup, powdered sugar, gum bases and flavoring ingredients are combined, kneaded and blended. The completed batch is then chuted to conveyor belts, where it passes through a series of rollers. Here the continuous mat of gum is progressively flattened into a web or ribbon of proper thickness, after which it is cut into 18-in. square sheets and scored into sticks. Powdered sugar dusted on the surface prevents adhesion to the rollers.

Following a 24-hr. cooling period, the gum is then introduced into special machines developed by the company and made in its own shops. A large battery of these machines wraps the individual sticks, assembles them in groups of five and applies the outer wrapper in a matter of seconds. Operators feed the sticks of gum into these units and keep them loaded with continuous rolls of packaging material.

In addition to wrapping each stick of gum and assembling five sticks into finished packages, the completely automatic machines also place 20 of the packs in display trays, which are later overwrapped with cellophane.

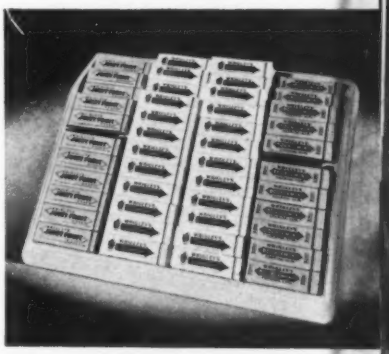
Inspectors who check the five-stick packs as they emerge from the machines are equipped with individual intercommunication units. When a wrapping flaw is discovered, the inspector informs the machine operator via the intercom and the correction is immediately made by adjusting the equipment.

Production from all wrapping machines moves on belts to the inspection department, emerging on a wide belt. Here the inspectors dump the contents of each tray, examine the packages and replace them in the trays in virtually a single operation. Inspected trays are then transferred to another conveyor belt which carries them to the battery of box-wrapping machines, of a type having an operating speed of 60 trays per minute. These machines overwrap the tray-type units with cellophane, inserting another red tear tape at the same time and closing the package with a combination of heat and a solvent sealing compound. The wrapped trays are then conveyed to the packing section of the plant, where they are packed in counts of 50 in extra-strength shipping containers.

The counter display box used by Wrigley is a 20-package unit made of white patent-coated board, printed with the brand designs with an overprint of varnish. The one-piece unit incorporates an advertising display flap which unfolds to an upright position when the cellophane wrapping is removed. Display flaps carry a selling message and different design for each brand of gum. This box superseded an earlier type of set-up chipboard tray which was discontinued in August, 1948, and is produced from flat blanks on equipment in the Wrigley plant. The company discontinued the use of slip covers in the early part of World War II as a result of boxboard shortages. Shortly after the war, cellophane for box wrapping was



DISPLAY RACKS are important to the Wrigley's merchandising scheme, which holds that most gum is bought on impulse. Wire cash-register units hold six or 12 cartons, offer three flavors.



LATEST TYPE is molded polystyrene tray for cashier's counter, designed to be kept loaded with five-stick packages without the display box. This unit is not limited to Wrigley brands.



VERTICAL RACK takes little counter space, will hold either three cartons of the new 18-stick pack, or six cartons of the regular five-stick pack. Large economy package, selling for 15 cents, is gaining in popularity.



VENDING MACHINE pioneered by Wrigley's promotes sales of five-stick, rather than single-stick package, and is not restricted to Wrigley brands. Electrically operated, it has a curved window for maximum display.

permitted and with the introduction of the new type of one-piece folding carton, the display flap was incorporated.

Advertising and promotion

Perhaps unparalleled in packaging annals was Wrigley's program to keep its package familiar and its established brand names alive during the war period, despite the fact that the company's entire production of these brands was shipped to the Armed Forces after May 1, 1944. As overseas sources of gum base materials were cut off, the company's supplies of top-grade materials dwindled. When the standard brands were withdrawn from the market, Wrigley's brought out a wartime brand, Orbit (one of the older brand names previously used by the company). This was frankly offered as a wartime substitute, not sufficiently high in quality to carry a standard Wrigley label, but the best that could be made from materials then available. In the latter part of the war, as the supply situation worsened, there were not even enough top-grade materials to continue output of standard brands for the Armed Forces. At that time (February, 1943), production of Wrigley's Spearmint, Doublemint and Juicy Fruit was discontinued and Orbit alone was supplied to the Armed Forces.

As might be expected, the quality of Wrigley packaging also had to be cut during the war period. In March, 1941, nine months before restrictions were placed on civilian purchase of aluminum, Mr. Wrigley directed the voluntary surrender to the Government, for use in the aircraft program, of the company's entire inventory of almost a million pounds of aluminum ingots and slabs for packaging foil.

Throughout the war, emphasis was placed on the part chewing gum played in maintaining morale on the fighting fronts. Millions of sticks of Wrigley's gum were included in kits of emergency rations. Statistics indicate that the G. I. overseas chewed an average of more than 600 sticks of gum per year, compared with the prewar figure of 100 per capita for the civilian population. Gum from Wrigley's Australian plant became a psychological weapon during the war against Japan when thousands of sticks of gum in special wrappers were dropped from U. S. aircraft over the Jap-held Philippine Islands. These wrappers pictured the American and Philippine flags crossed on one side and the promise—"I shall return—MacArthur"—on the other.

To keep its departed brands fresh in the minds of the public, Wrigley's conducted an intensive advertising program that was the ultimate in simplicity and impact. It featured illustrations of an empty Wrigley's Spearmint wrapper with the terse request: "Remember this wrapper." Undoubtedly, this was the first major advertising campaign ever built around an empty package.

There were those in the business world who believed that Wrigley's withdrawal of standard brands from the market might prove suicidal. Most manufacturers of gum, as well as makers of cigarettes, candy and numerous other packaged products kept some kind of product on the market during the wartime period under established brand names even though it was impossible to maintain product quality at prewar standards. The wisdom of Wrigley's program was proved after the war, however, when the company's standard brands again reached distribution channels and sales rose to an all-time high. By 1947 consumers were buying many millions more packages than ever before in the company's history and volume has increased each year since. Wrigley net sales during the first half of 1950 totaled $35,252,927, compared to $35,043,452 during the like period of 1949.

Distribution channels

The Wrigley brands of gum are distributed through wholesalers, who in turn supply the retail merchants in each community. Depending on the location of the wholesale customer, shipments are made from the factory in Chicago or from warehouses in New York, Los Angeles, San Francisco or Portland, Ore. The company's list of retail outlets—so representative that during the war it was made available to the Government for mailing purposes—includes more than 900,000 establishments.

Another form of distribution used by Wrigley is vending machines, which are important in locations where chewing gum is not readily available through some regular type of retail outlet—in factories, for example, or on subway and elevated train platforms. Prior to the recent war, most gum was vended in 1-cent units, but recently there has been increased emphasis on the vending of complete 5-cent packages. Among the latest-type vending machines developed by the Wrigley company and made available to regular vending-machine operators are manually and electrically operated console-style units which provide a full display of either four or five columns of gum, in line with recognized trends in self-service merchandising. These machines are not limited to Wrigley brands, but also include one or more competitive brands.

A special 18-stick package, designed to retail at approximately 15 cents, was introduced by Wrigley late in 1948 and given preliminary sales tests in the East.* By adhering the individual-stick wrappers together by means of an encircling paper band before the gum is placed in the outer wrapper, this unusual pack permits sticks of gum to be withdrawn without causing the rest of the package to become loose and allow the remaining sticks to drop out. The tear-tape opener is similar to that used on the regular 5-cent packages, and design treatment closely parallels the standard wrappers for the re-

(*This article continued on page 201*)

* See "18-Stick Gum Pack," MODERN PACKAGING, March, 1949, p. 91.

Assembly-line lettuce

HOW ONE GROWER HAS LICKED MECHANIZED PRE-PACKAGING PROBLEM, ELIMINATING THE USUAL 30% WASTE

Waste and shrinkage factors in leaf lettuce, which normally are estimated to amount to as much as 30% between picking and consumption, are being reduced to practically nothing by Ruetenik Gardens, Cleveland hothouse grower, through the institution of a progressive pre-packaging program.

The operation is said to be the first of its kind in America and has been received with more than normal enthusiasm by both wholesalers and retailers. As a result, Richard Pretzer, owner and manager of Ruetenik Gardens, reports that he is installing additional packaging machines and plans to enlarge his growing capacity of leaf lettuce accordingly.

The assembly-line packaging program came about as the result of the combined efforts of the grower, the packaging-machinery manufacturer and the film converter. The new program constitutes about 80% of the production at Ruetenik Gardens and, even at that rate, the company has not been able to satisfy demand for the packaged leaf lettuce.

Underlying principle of the pre-packaging idea was to cut down the rate of moisture loss of the produce. This brought up the first "bug" to be ironed out. A packaging material was sought which, in addition to making an attractive package, would be able to withstand the great amount of moisture in fhe lettuce. The film converter came up with the answer by suggesting a moistureproof cellophane bag. This material, furthermore, provided excellent visibility for the lettuce, whose greatest selling point is its own fresh, green appearance. The package is further enhanced by three-color printing highlighting Ruetenik's "Sun Raised" trademark. A prominent space is also provided for individual price marking.

The packaging machine is electrically driven and requires only two operators. Basically, the machine consists of a long funnel, through which paddles move to propel the lettuce through a washing and cleaning process. One operator trims the fresh hothouse lettuce and places it in the opening of the funnel. The second operator positions the cellophane bags, which are stacked in a convenient tray near the funnel, over the other end of the funnel and the lettuce is automatically pushed into the waiting bags. A third operator packs the filled bags (which are not sealed) into shipping containers.

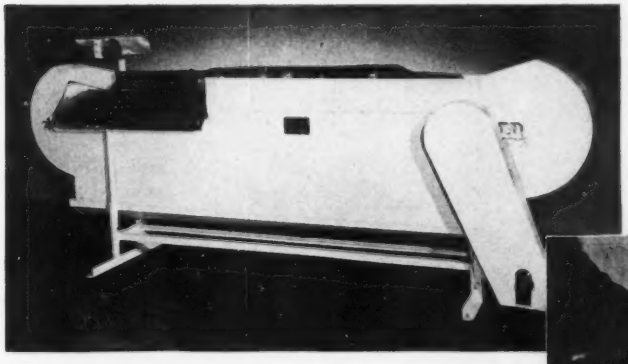
As a final note, the company adds that the assembly line is capable of bagging up to 35 stalks of leaf lettuce per minute—an impressive figure for an ordinarily difficult item.

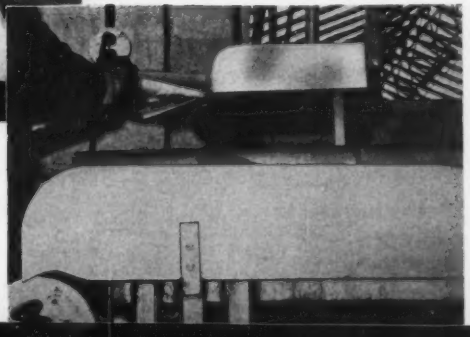
CREDITS: *Bagging machinery, American Specialty Co., Amherst, Ohio. Cellophane converter, The Dobeckmun Co., Cleveland, Ohio.*



CELLOPHANE BAG printed in three colors makes attractive, moistureproof package which greatly reduces moisture loss of leaf lettuce. Bag, measuring 5 by 2¼ by 13 in., is unsealed.

PRE-PACKAGING MACHINE combines trimming, washing and packaging operations in a single unit. The long funnel contains paddles to propel the lettuce through the washing and cleaning process. With two operators, the machine is capable of bagging up to 35 heads of leaf lettuce per minute.





SLIPPED OVER FUNNEL, printed cellophane bags are filled as lettuce emerges from receiving end of machine. Tray near mouth of loading funnel holds bags.

MP DESIGN

Quality appeal with strong trademark identity



Repackaging of Masslinn non-woven rayon and cotton napkins and towels made by Chicopee Mills, Inc., a subsidiary of Johnson & Johnson, has been planned to dovetail with the first national advertising campaign for the product. The aim of the new package design for this family group is quality appeal within the confines of a low-cost cellophane wrap and automatic production. All wraps are printed in three colors—gold, black and white. The lavish use of gold as a frame contrasts effectively with the color combinations of the product patterns, clearly visible through the transparent section of the wrap. Highlight of the design is the black bull's-eye, containing the Masslinn logotype in white and the crown-like trademark—made up of two M's, one inverted—in gold.

CREDITS: *Design, Koodin-Lapow Associates, New York. Wraps, The Dobeckmun Co., Cleveland, Ohio. Cellophane, Du Pont.*

Bayer adopts a cellophane bundling system

A new system of cellophane unit packing for Bayer Aspirin has "vastly improved retail merchandising possibilities of the product," according to The Bayer Co. Div., Sterling Drug, Inc. Cellophane packs provide smart, clean, moistureproof units that are easier for wholesalers to handle and convenient for retailers to convert into shelf units for display. Six bottles of 24s, six bottles of 100s and 24 tins of 12s are cellophane bundled, eliminating former shelf cartons. Previous hand packing has been replaced by semi-automatic cellophane wrapping, but completely automatic wrapping machines will soon be in use. To test the effect of climate extremes, the new cellophane bundles were first introduced under careful check in Springfield, Mass., and Jacksonville, Fla. After these tests substantiated expectations, meeting differing conditions of heat, cold and breakage, national distribution was gradually instituted area by area. Complete national distribution has now been achieved and, according to the Bayer company, both drug wholesalers and drug retailers have approved the new cellophane packs.





CREDITS: *Semi-automatic and automatic wrapping machines, Scandia Mfg. Co., North Arlington, N. J. Cellophane, Du Pont.*

HISTORIES

Re-usable polystyrene tiles become box covers

Something new in box lids are the polystyrene tiles, silk screened with harlequin figures, that form the covers for the "Optimiste Gift Set," newest cosmetic grouping offered by Tussy Cosmetiques. After the contents have been used, the tiles have re-use appeal as decorative and protective mats for cosmetic containers or as ornamental pieces for the home. Talcum powder and bottled toilet water fit into individual paperboard trays. Inverted paperboard trays affixed to the bottoms of the two tile squares form telescoping closures for the items. The entire assembly fits into a set-up paperboard base fitted with a center insert. The unit forms an attractive dressing-table piece.



CREDITS: *Box, N. L. Tarshis, Brooklyn, N. Y. Polystyrene tiles, Injection Molding Co., Kansas City, Mo. Bottle, T. C. Wheaton Co., Millville, N. J. Silk-screen printing, Cerigraphic, Inc., Newark, N. J. Caps, Richford Corp., New York.*

English seed packets are garden markers

The gardener's petty bugbear of having to write out and make indicators is eliminated with this ingenious "Pegga-pak" combination seed packet-marker, introduced after three years of testing by the British firm of Gaygardens, Long Eaton and Stapleford, Notts, England. The patented idea consists simply of a paper seed packet attached to a hardwood veneer stake 5¹/₈ in. long by ¹/₈ in. wide by 1 mm. thick, the lower pointed section of which protrudes below the packet for insertion in the ground. To insure weathering properties, a good quality paper, lightfast printing inks and a special durable cement are used. Gardeners report the durability of the pack to exposure exceeds the "few weeks" claimed on the package, having withstood three months' exposure in typically English summer weather. The stake is cemented over the central seam of the packet to provide reinforcement for the normal gummed joint. The stakes are made of scrap veneer, stamped out by the same methods used for making wooden ice-cream spoons.



CREDIT: *Packet, John Dickinson & Co., Ltd., Hemel Hempstead, Herts, England.*





THE FILM BAG is the newest development in the general trend toward bag packaging of many Western produce items. Semi-automatic bagging equipment, such as this Ahlburg orange bagger, provides economical speed. Elastic-topped Pliofilm bag needs no closing operation.



BIG ADVANTAGE of strong film or mesh bag is that it can be shipped without any master container. Note cushioning pads surrounding load in photo above. Bag is said to provide an economical, volume-moving package. PHOTOS COURTESY SHELLMAR PRODUCTS CORP.

Produce shippers'

No longer academic is the question of whether pre-packaging of produce can successfully be done at the shipping point. Experience, often brutal and costly, is answering this controversial question. Some very definite trends and tendencies in the location, manner and method of produce pre-packaging have begun to appear on the West Coast, setting a pattern for future operations.

Only a casual observation in the retail markets is required to realize the rapid progress which pre-packaging has made both at the shipping point and at the market in the last few years. Many of the merchandising promises and benefits claimed for pre-packaging are now being fulfilled. The die-hards who believed in the ultimate benefits of this development are beginning to realize some encouraging results from their efforts.

More effort has been devoted to produce pre-packaging by shippers on the West Coast than in any other section of the country. Retailers in Pacific Coast cities are generally less receptive to pre-packaging than Eastern grocers and Western producers have directed their efforts at supplying the pre-packaged needs of the East.

At one time or another in the past few years, Western shippers have attempted to package practically every produce item. Most of these attempts were made by trial and error under poorest possible conditions and shippers were easily discouraged. Lack of knowledge of packaging techniques, inadequate equipment and materials, inefficient methods, absence of suitable preservative and refrigeration processes were only a few of the obstacles. But out of many trials some progressive steps have emerged.

• Packaging consultant, Hollywood, Calif.

The bag is big

The most significant development in Western pre-packaging in the past two years has been the emergence of the bag as an all-around package. This package, better than others, has met the shippers' need for an economical, volume-moving, shippable package. Consequently, major developments in equipment, packaging techniques and shipping methods have occurred with the bag.

Shippers have long complained that most unit-packaging methods and materials are too slow to handle the huge volume of produce that daily moves through the packing house. The bag readily adapts itself to rapid volume filling with the minimum of equipment; is flexible enough to take all sizes and shapes of the commodity packed; lends itself to form-fitting packing in shipping containers and, above all, is the only package which often requires no master container.

The bag has developed as the most suitable container for the larger 3- to 5-lb. units required by retailers for low-priced volume sales. Shippers have experienced a minimum of difficulty in setting up bagging operations. Equipment manufacturers have developed semi-automatic bagging equipment which meets shippers' needs for volume output. Although still costly in comparison with bulk packaging, the bag has so far proved the most adaptable produce package available to Western producers.

The principal use of the bag has been in the citrus, apple and potato industries. California-Arizona citrus producers met the problem of merchandising small sizes of oranges by packing them in 5- and 8-lb. film and mesh bags. In the last two years almost 30 million of these units have been packed in the "Sunshine States."

In 1949 Washington and Oregon apple producers were faced with a problem of disposition of an inordinately large crop of small Winesap apples. Again the bag was pressed into service; shippers rapidly set up production lines and hundreds of cars were loaded with 5-lb. bagged apples. Film bags, because of their visibility, were favored by shippers and retailers in packaging the commodity, although previously mesh bags were favored.

This past season Northwest shippers geared up for even larger bag-

ging activities, encouraged by the development of the newer types of transparent bags with elastic, drawstring or paperboard closures, which reduced packing and handling costs materially. However, instead of small or medium-sized apples, shippers were faced with an unusual crop of extremely large apples. Although many doubts prevailed as to the ability of the film bag to carry successfully 3 lbs. of such large, easily bruised apples, hundreds of carloads were again shipped to the distant corners of the country in excellent arrival condition. Automatic filling and weighing equipment with more efficient use of conveyors cut labor costs to slightly less than those for standard bulk packaging.

Some savings in materials and freight costs have been effected in the use of corrugated shipping containers. Approximately a one-third saving over the cost of wooden boxes has been reported by some packers.

California's famous long white potatoes are this year being packed in considerable quantity in 10-lb. mesh, film and paper bags. These are being shipped to all parts of the country with ready trade acceptance. Some shippers are using master containers, such as multiwall bags, but most are loading from 3,000 to 3,500 10-lb. bags directly into the car by conveyors off the packing line.

Lemons, grapefruit, onions and nuts are other commodities which are finding their way into bags for shipment.

Not restricted to "hardware" produce items, the film bag is also in wide use for vegetables and soft fruits.

Topped carrots packed in 1-lb. film bags were one of the first vegetables to be considered for pre-packaging. The apparent savings in transportation because of elimination of the green tops at shipping point made it a natural to tackle first. After much trial and error, the transparent film bag has evolved as the most suitable pack-

progress

IN THE FACE OF MANY DIFFICULTIES, WESTERN GROWERS ARE FINDING WAYS TO MAKE PRE-PACKAGING PROFITABLE AND PRACTICAL.

By Franklin Gindick*

PHOTO COURTESY STANDARD PAPER BOX CORP.

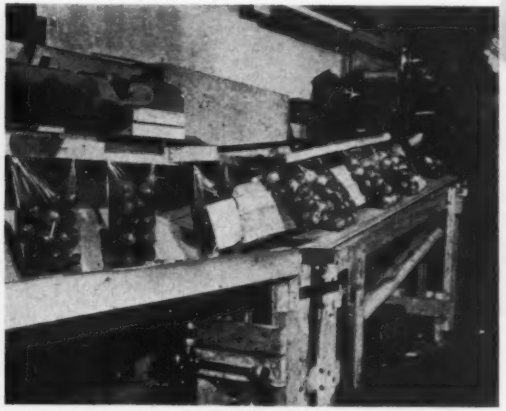


EGG-TYPE CARTON with die-cut windows has proved effective package for the larger sizes of California apples, which have tender skins and can't be bagged. The corrugated shipping container in many cases is replacing the heavier wood box.

PHOTOS COURTESY WASHINGTON STATE APPLE COMMISSION.



SHIPPERS IMPROVISE equipment to meet needs. Here apples are filled through chutes into Denton Pliofilm bags.



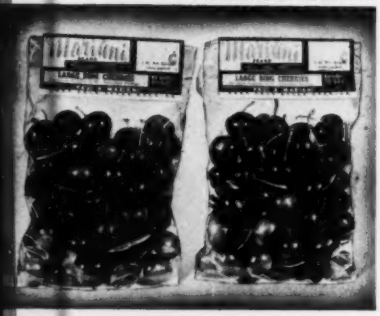
HANGING CONVEYOR carries filled bags of Washington apples to machine in position for stapling the closures.



PHOTO COURTESY STANDARD PAPER BOX CORP.

SPECIALTY ITEMS like persimmons find increased sales when protected and exhibited in this open, cell type of carton, faced inside with acetate film.

PHOTO COURTESY CELANESE CORP.



ECONOMICAL HANDLING of such highly perishable fruit as Bing cherries is provided by 1-lb. acetate bags, filled by machine and with stapled saddle labels.

PHOTO COURTESY CELANESE CORP.



MUSHROOM MARKETING is extended by this tray overwrapped with colorfully printed acetate film. Packaging has enormously increased mushroom sales in many distant markets.

age for this item and a few persevering shippers have developed methods of packing which are notably successful. Automatically graded for size, rapidly scooped into bags and automatically closed by precision stitching or heat-sealing equipment, topped California carrots are being put up economically and successfully shipped in fair volume.

Brussels sprouts also have been brought into the pre-packaged family with successful merchandising results through the film bag.

Sprouts are particularly difficult to package because of the prevalence of slime. The sprout producers have licked this problem by refrigerating the sprouts with a cold-water bath, which is also used to retard bacterial decay through sanitizing agents in the water. Temperature control after packaging has resulted in uniformly excellent arrivals in distant markets.

Up to a few years ago celery hearts were considered as waste by most shippers and ended in the cull chute. Today thousands of packages of celery hearts are shipped out of California to Pacific Coast and Midwestern markets. Two celery hearts in a transparent bag form a common item in most California vegetable displays.

Like Brussels sprouts in shape, size and adaptability to hopper and funnel filling, cherries also have tended toward pre-packaging in film bags. The appalling perishability and waste in cherries sold in bulk makes pre-packaging almost a must. Last year both Northwest and California cherries packed in 1-lb. bags went by planeload and carload to the major terminal markets of the nation. Several Northwest producers have evolved rapid packing methods which, together with the cost of materials, make it less expensive to pre-package cherries than to put them up in bulk containers.

Other soft fruits such as apricots, plums, figs, Italian prunes, etc., have also been packaged in bags, but with less success to date than cherries.

Cartons, too

Other commodities are proving best in package forms other than the bag.

For the past two seasons a California packer has shipped numerous carloads of asparagus packed in 1- and 2-lb. waxed cardboard cartons. Others have bunched asparagus in 1-lb. units with tape or rubber bands.

Oregon mushrooms in gaily overwrapped cartons are in evidence in most West Coast retail stores, packed at shipping point.

Western producers have long despaired over the extravagant cost of shipping cauliflower to the East with the outer jacket leaves. Over 60% of the weight of a crate of cauliflower was represented in these jackets. Last year enterprising California shippers stripped these leaves from the cauliflower at shipping point and shipped the snow-white curds only, wrapped in transparent film or in foil.† In the same-sized master container, 24 heads were packed as compared with 8 to 12 heads with the green jackets. Again excellent arrivals justified continuance of the operation.

California Gravenstein apples, tender skinned and unsuitable for bagging, have been put up for the past two seasons in cell-type cartons containing 2 lbs. of fruit. Shipped into Texas markets, these cartons in corrugated shipping containers have had good arrivals and consumer acceptance. Miniature corrugated cartons containing from 2 to 3 lbs. of apples were shipped in considerable quantity from the Northwest in the past two seasons.

Overwrapped or window-cartoned plums, apricots, peaches, nectarines, figs, persimmons, apples and grapes have been tried in various degrees in California, Washington and Oregon with little success. In most instances the operations were small, inefficient, costly and the amounts shipped too small for conclusive results.

The most difficult of all commodities to pre-package and the one most desired in packaged form by retailers —lettuce—has made little real progress in shipping-point pre-packaging in the last two years. No equipment has so far been developed for fast, volume packaging of this commodity at shipping point. High-speed packaging equipment capable of wrapping from 150 to 200 heads per minute is still the big challenge.

Promise for the future

Developments in several directions may alter the course of shipping-point packaging in the next few years.

The first of these has been the development of "flash" cooling of fruits and vegetables. As is well known, the faster that field heat is eliminated, the longer the product's shelf life.

A vacuum-cooling process now in use in California will pre-cool leafy

† See "Cauliflower in Foil," MODERN PACKAGING, July, 1950, p. 136.

vegetables such as lettuce to 32–35-deg. temperatures in 25 minutes. Present equipment can handle two-thirds of a carload of lettuce in approximately a half hour. Such rapid cooling can also be accomplished with pre-packaged lettuce, provided a few small holes are punched in the film. Pre-packaged and "flash-cooled" lettuce, spinach and other leafy vegetables can be shipped to distant markets without top ice, the meltage of which affects the appearance of the package.

The use of cold-water pre-cooling, cold-air circulating systems and rapid tunnel-cooling methods before pre-packaging also aids preservation.

Better methods of decay control through chemical washes offer an insurance policy to the pre-packager. More and more shippers are introducing such chemicals into their wash water. This curtails the spread of bacterial decay, lessens dehydration and lengthens the shelf life of the product. Cauliflower, celery, potatoes, melons, sprouts, carrots, etc., are being subjected to such decay control.

Equipment developments

Equipment manufacturers are more than ever catering to the needs of the produce industry in the development of specialized equipment for pre-packaging produce. The possibilities of stretch-wrapping with Pliofilm are being demonstrated daily on many Western commodities. With greater speed of operation, this equipment will have a valuable role in furthering shipping-point pre-packaging.

Bagging operations are being constantly improved in speed, dependability and economy. Although there is much to be desired in the field of packaging equipment, results of practical applications on the Western packaging front are encouraging.

Much of the progress in pre-packaging West Coast vegetables in the last two years is due to a new approach taken by shippers. In those instances where shippers attempt to carry on a pre-packaging operation *only* in sale of their entire output, the results are most often fatal. Variations in quality sometimes make it impossible to package any of a particular day's production. If not set up for bulk packaging, shippers cannot dispose of the day's production.

The new approach considers the pre-packaging operation as supplemental to the main operation of packing in conventional bulk containers. Under this system shippers can package only the "cream" produce as it is available, or use pre-packaging as a salvage operation for the off sizes.

Most shippers actually consider pre-packaging as a salvage operation. Small sizes of various vegetables are usually heavily discounted in price at wholesale and retail markets, sometimes at considerable loss to the producer. Although it is edible food, of good quality, it is discarded.

Celery hearts, thrown away by most shippers, illustrate this point. Several packers have set up pre-packaging lines in conjunction with their regular lines to handle these tender, delectable hearts. Thus any returns for the celery over the cost of packaging represent a clear profit to the shipper. Most often this celery outsells the larger celery on a pound basis.

Brussels sprouts, carrots, artichokes and cauliflower are other commodities where the "salvage" approach has been successfully taken. Only the small carrots, usually thrown out, are bagged in the packaging operation of successful California pre-packagers. Uniform in size and tender, they are appealing to the housewife when packed in transparent film bags.

Apple and orange shippers also have realized packaging success in the bagging of hard-to-sell sizes. Of top quality, the very small or very large apples are unwanted by the average housewife. Pre-packaging of these sizes seems to create an illusion of a single unit of this fruit to the housewife, with the result that she often buys it in preference to bulk fruit. Small oranges look better in a bag, as do "peewee" potatoes. Mrs. Consumer buys these bags at the same or often at a lower per-pound price than the larger sizes. As a result, more merchandise is moved, the shipper and retailer benefit and, finally, the housewife benefits.



PROVEN PACKAGE is the printed paperboard boat used for asparagus, overwrapped in a moisture-permeable acetate film.

PHOTO COURTESY DUFF CALIFORNIA CO.



PROBLEM CHILD of pre-packaging is head lettuce. No high-speed machine-wrapping method has yet been found. Most of it is merely trimmed and crated in the field, as in this operation near Salinas, Calif.

Gifted towels

COLORFUL SETS FOR HOUSEHOLD LINENS, PROPERLY PRICED, SHOW THE WAY TO SUCCESSFUL GIFT PACKAGING

Few manufacturers of utility goods have done a better job of gift packaging to broaden their markets than the makers of towels and household linens.

The sales of packaged gift sets, it is said, have risen so steadily in some stores that the colorful towel and sheet-and-pillow-case packages have actually become a dominating factor in this field of department-store merchandising.

The recognized leader for 15 years is Cannon Mills, which this year has a collection of more than 20 newly designed gift packages for the holiday season.

Another firm making a strong bid this year for a share of this gift market is Martex which has announced "the strongest box line in its history."

A study of the gift-packaging techniques of these firms is of considerable interest to those in other fields looking for the successful way to increase sales through gift packaging.

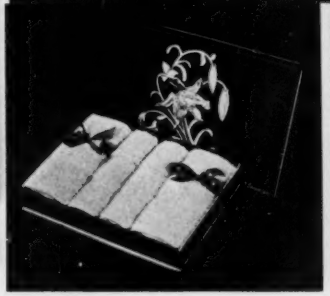
In both lines, there is definite evidence of careful market study to provide selling units with proper price appeal, sizes and shapes to meet retailer demands for easy handling and to provide the colorful display excitement that stimulates sales in household-linen departments.

Cannon collection

A past master in the use of pleasing color combinations irresistible to feminine shoppers, Cannon this year introduces a group of packages with more than usual interest because of the adaptation of some of the newest decorative packaging aids.

There is a lavish use throughout the Cannon line of foil box coverings

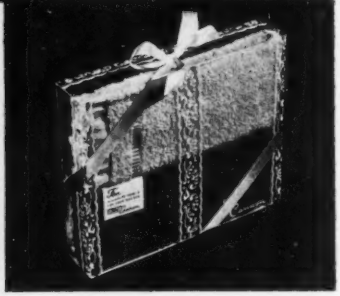
Cannon uses subtle feminine appeal



1. EMBOSSED FOIL label gives brilliance to blue-green box cover.



2. OVAL BOX has white and gold embossed cover with pink and rose.



3. ACETATE permits use of miniature towels as the color interest.

4. RAYON-ACETATE fabric gives luxurious satin finish to embossed covering.



5. CARRYING CASE is folding box designed for small fry at Christmas.



6. FLORIST BOX is a novelty, complete with rose corsage.



to give new brilliance and elegance. For the first time, the box coverings are also being made with embossed designs. These decorative effects are even carried over to interior coverings on hinged boxes to give greater refinement to the packages. In several instances, the boxes are covered with the new laminated rayon fabric and acetate materials which give a luxurious satin finish to the boxes.

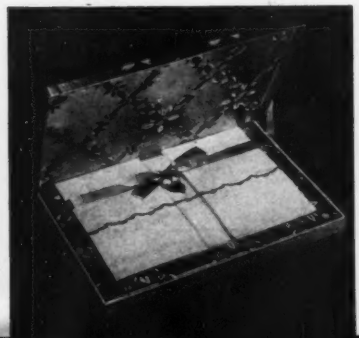
Colors continue to show a predominant use of pastels: pinks, greens, chartreuse, yellow, blue, white, combined with delicate floral motifs perennially popular with women shoppers. All packaging is adroitly selected to harmonize with the newest towel shades, both delicate colors and the deeper tones which have gained preference today for bathroom decor.

Clever new effects have been achieved by the use of foil-embossed color-printed labels. One of these depicts an exotic tiger lily on a $3.95 box containing two bath towels, two face towels, two wash cloths which has been given a name from the package design—"Exotic."

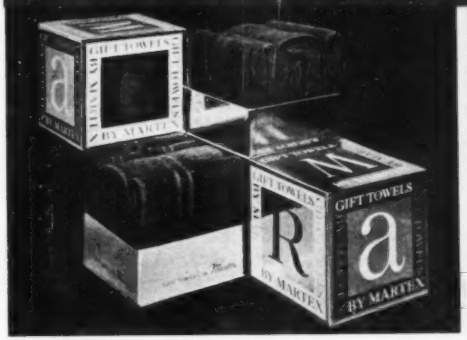
The Cannon sets start at $1.98 for the very popular new combination of four terry miniature guest towels. The packages are offered in a number of flat rectangular boxes for which some stores have specified a preference. In addition, however, there are several oval and round shapes to give variety, to provide opportunity for more interesting arrangements in mass display and points of interest to attract the shopper.

Also in the collection is a clever little folding box with carrying handles called the "Traveler," holding a checked set of two bath towels and two wash cloths for small fry on the Christmas list.

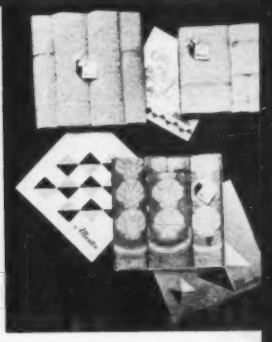
7. SILVER FOIL decked with a criss-cross of rosebuds provides a lovely setting for two fine percale sheets and pillow cases by Cannon.



Martex chooses geometric motif

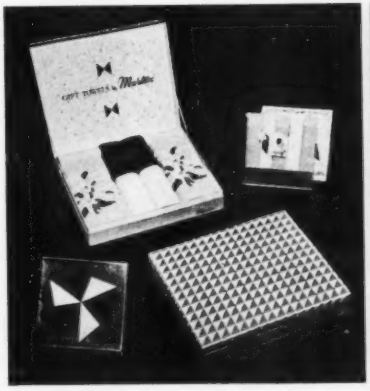


8. DIFFERENT LETTER on each side of these foil-covered boxes spell Martex when arranged in display.

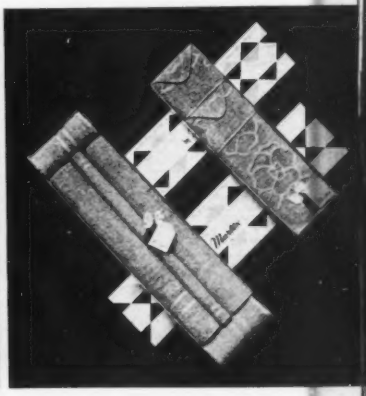


9. HARLEQUIN check is basic motif for Martex.

10. VARIATIONS of the new harlequin theme are arranged on foil box coverings.



11. LONG, SHALLOW boxes are an innovation in shape for these gift sets.



This year's novelty is the "Flower Box." Tied with a picot-edged ribbon, it looks just like a florist box and the company says, "What woman isn't thrilled to see those long green flower boxes." Inside this long, green, foil-covered folding box nestles a corsage of delicate rosebuds and ribbons atop a luxurious six-piece set of two bath towels, two face towels and two wash cloths for $5.95.

Cannon has also used transparent acetate to excellent advantage with the color of the towels showing through to provide the eye interest. A clear acetate box, printed with a lace pattern in white and tied with perky ribbon, displays four bright Cannon fringed terry miniature guest towels—an excellent Christmas gift or all the year around.

In fact all of the boxes, although introduced for the peak fall selling season, are suitable for year-around selling as shower, bridal or hostess gifts—an essential of any gift line in this category today.

Martex line

Dominating the Martex line is a motif of harlequin checks used in various geometric arrangements on a series of items priced to retail from $2.95 to $9.95 in one-dollar jumps. All of the boxes are metallic-foil covered with lettering and design printed in black and pink against backgrounds

(*This article continued on page 200*)

PACKAGING

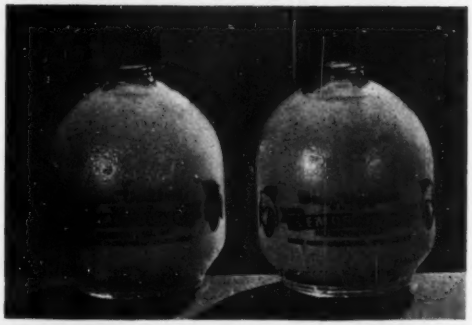
1 Black & Decker Mfg. Co. utilizes this orange and black printed corrugated display box to promote the sale of accessories, often overlooked by customers, along with hand power tools. A one-piece unit with inserts, the box features a die-cut display panel in its scored lid. Box, Hinde & Dauch Paper Co., Sandusky, Ohio.



1

2 Sun Valley lemon and lime juices, new products marketed by California Products, Inc., are appropriately packaged in specially designed fruit-shaped bottles, each containing 6 oz. of full-strength juice for home or bar use, with sprinkler tops for convenience in dispensing. Applied color labeling is in red and green. Bottles and closures, Owens-Illinois Glass Co., Toledo.

3 Pilferage, breakage and loss are reported to have been sharply curtailed by the Sabin's Mfg. Co. since the adoption of this corrugated display container for Crest-O-Gold 16-piece china dinnerware sets. Made from a one-piece, die-cut corrugated blank, it measures 16$^{1}/_{2}$ by 14$^{6}/_{8}$ by 3$^{6}/_{8}$—compact for shelf and counter—and is made with full turnover sides, front snap locks and tuck top. Container, Ohio Boxboard Co., Rittman, Ohio.



2

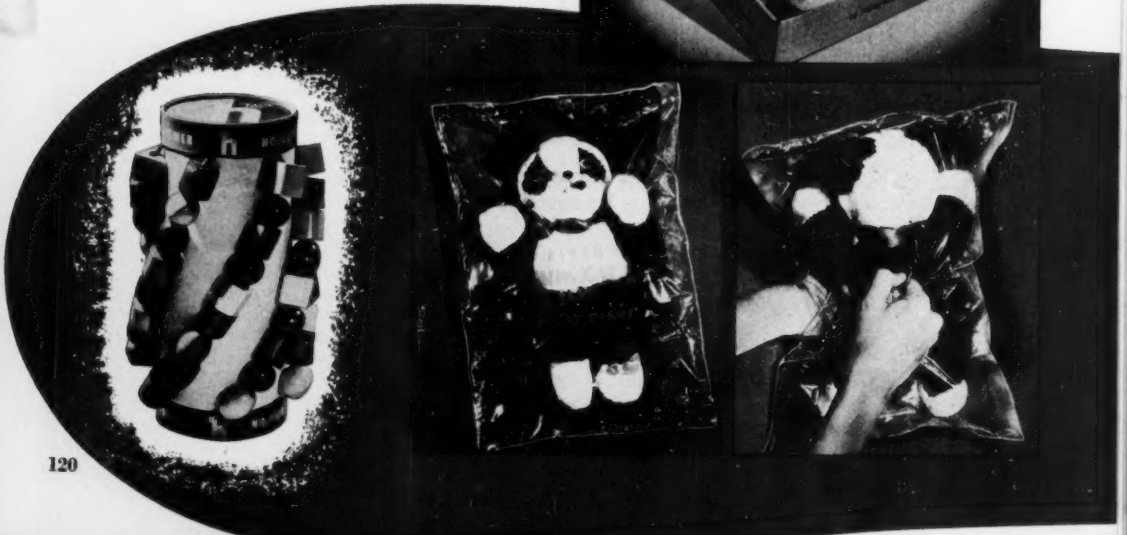
4 Demonstration of mechanical toys while they are inside the packages is the advantage of these heat-sealed Pliofilm bags used by Decatur Industries for their Alpen Musical Toys. Winding keys can be grasped through the tough film and turned without opening the package. One size of bag, 18 by 11$^{1}/_{2}$ in., accommodates the entire line of dolls. Bags, Milprint, Inc., Milwaukee, using Goodyear Pliofilm.

5 The new Holgate Bead Tower carries the product on the outside of the package rather than inside. The tall cylindrical drum supports the multicolored beads, with trademark prominently displayed on top and bottom. Parents appreciate the re-use feature of the container as a catch-all for items left lying on the floor. Design, Frank Gianninoto, New York. Container, Harcord Mfg. Co., Jersey City, N. J. Printing, Wickersham Press, Inc., Long Island City, N. Y.



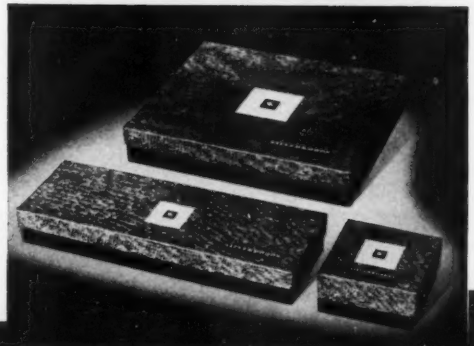
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6 Kaiser Aluminum & Chemical Sales, Inc., has introduced packaged aluminum household foil on the Pacific Coast under the brand name of Kaiser Foil. For shelf visibility, the package background is red, with trade name











and sketches of product uses prominently featured. A convenient price spot appears on one end. Package, Container Corp. of America, Chicago.

6 **7** A six-color reproduction of a color photograph printed by the gravure process on moistureproof cellophane creates a package with mouth-watering appeal for Town Square Frozen Strawberry Shortcake, product of E-Z Bake Products Co. Highest-quality ingredients—berries, cake base and whipped-type topping—required a package that would reflect this quality and give maximum impulse sales appeal. Wrap, Shellmar Products Corp., Mt. Vernon, Ohio.

8 Careful selection of color and design produce a gift box for Silverwood's—a quality department store in Southern California—suitable for both men's or women's apparel and for all seasons—including Christmas. The tweed top, reproduced from a photograph, is printed in black. The trumpeter trademark is bright red in a large white square. Box bases are covered with glossy red paper. Design, Weatherwax-Spurgeon & Associates, Los Angeles. Boxes, Los Angeles Paper Box Mills, Los Angeles.

9 The character bottle has made its appearance as a container for flavored syrups—to be mixed with iced water to provide a beverage—produced by Snow Crest Beverages, Inc. The Teddy Bear bottles with slotted metal screw caps have re-use value as banks. In the New England States, where the item has had initial distribution, these one-pint bottles are said to have met with wide acceptance. Bottles, Owens-Illinois Glass Co., Toledo. Closures, Hazel-Atlas Glass Co., Wheeling, W. Va. Labels, Clark-Franklin Press, Boston.

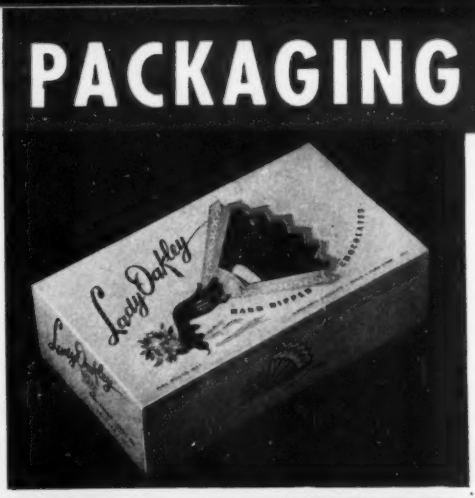
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10 Always to be counted on for something new in liquor gift packaging, Glenmore Distilleries puts "Kentucky Tavern" in a decanter with Currier & Ives designs applied by the ACL process. Tie-in possibilities are galore for this outstanding package in this year's Glenmore collection, as companion glasses will be available through stores and special promotions. Decanter, Owens-Illinois Glass Co., Toledo.

8 **11** Television Westerns inspired these "Ranch House" packages of cheese introduced by Zausner Foods, Inc. Three individually wrapped triangular wedges of cheese fit into a holder-type package molded of transparent

polystyrene. Molded relief designs follow the four-color lithographed stage-coach labels which back the face of the holder and are visible through the plastic. Back of the label describes re-use of the holder as a napkin or letter holder, cigarette tray, or as a toy. Cheese wedges are secured with tape. Holder, Majestic Molded Products, Inc., Long Island City, N. Y., using Catalin Corp. polystyrene. Labels, Barton Press, Newark, N. J.

12 Consumer reaction to the new window boxes for Lady Oakley chocolates is expected to warrant the Boulevard Candy Co., makers of quality candy sold through mass outlets, to change other packages in the line to this type of visual selling. The die-cut window is fan shaped, carrying out the feminine and aristocratic theme of the design. Three-color lithographed label and boxboard are both die cut and registered in a special process with the cellophane window as part of the assembly, which allows in a set-up box the economical features usually associated with a folding box. Design, Cele Rosen, Chicago. Wrap, Michigan Lithographing Co., Grand Rapids, Mich. Boxes, mounting and die cutting, Mutual Paper Box Corp., Chicago.



12

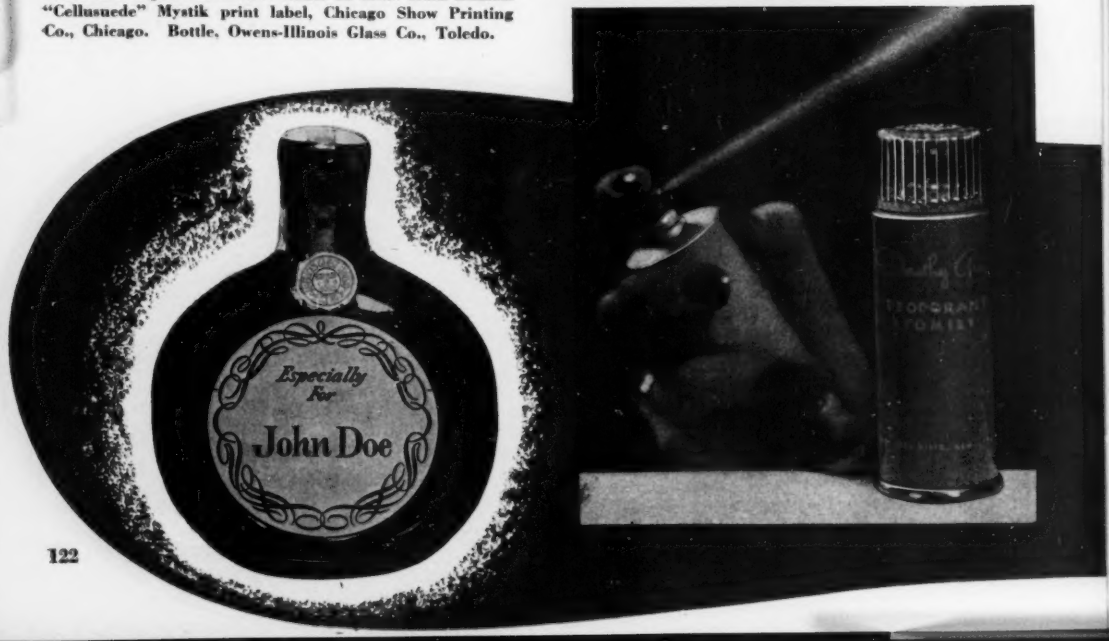
13 A bottle collar is used to point up the advantages of the new no-drip bottle adopted by La Choy Food Products for its La Choy Soy Sauce. A polyethylene sprinkler dispenser on the mouth of the bottle eliminates waste by preventing sauce from dripping down the sides. A phenol cap fits over the dispenser. Bottle, dispenser and cap, Owens-Illinois Glass Co., Toledo. Collar, Calvert Lithographing Co., Detroit, Mich.



13

14 Convenient-sized aluminum aerosol-type dispenser containers have been adopted by Dorothy Gray, Ltd., for a liquid deodorant called "Atomist." This lithographed, light-weight container holds 2 oz. of the liquid and operates by lifting off the plastic cap and pushing the button. Container, Sun Tube Corp., Hillside, N. J.

15 Individual labels for Brown & Forman's gift bottle of Old Forester are being introduced for the Christmas gift trade. Flocked labels, made of a rubber-saturated paper with a rubber-based adhesive, are supplied to the company with only the recipient's name lacking. Brown & Forman imprint customer's name on order from dealers. "Cellusuede" Mystik print label, Chicago Show Printing Co., Chicago. Bottle, Owens-Illinois Glass Co., Toledo.



PAGEANT



16 Double cellophane windows add to the display value of the new, smartly styled packages adopted by Seneca Knitting Mills Co. for its line of "Red Topper" and "Red Jacketeer" slipper socks. The double windows enable customers to inspect tops and soles of the socks without opening the package. Need for rider tickets is eliminated, since size, wool content, leather-sole construction now appear on the sole. Packages, Towanda Folding Box Co., Towanda, Pa.



17 Maximum product visibility is achieved by the Great Atlantic & Pacific Tea Co. for its Super-Right brand of sliced bacon with this package, consisting of an unprinted cellophane wrap placed over a greaseproof backing board which folds over at the bottom about 2 in., forming an identification and pricing panel. Cooking suggestions appear on the back of the board.



18 Graceful 12-oz. tumblers give unusual appetite and sales appeal to this family of "Berry Time" and "Fruit Time" preserves, jams and jellies marketed by the I.O.A. Foods Co. The tumblers are fitted with colorful red, white and blue decorated vacuum caps and matching spot labels. Tumblers (Anchorglass) and closures (Anchorvac T), Anchor Hocking Glass Corp., Lancaster, Ohio. Labels, Epsen Lithographing Co., Omaha, Neb.



19 Tintair, a new hair coloring that can be applied at home, is making its appearance in these gold, black, white and red packages. A three-year test program was conducted before the product was marketed and the company feels that a substantial percentage of the estimated $100,000,000 now being spent in beauty parlors for hair tinting will soon be going to department and drug stores selling these new home-use packages. An intensive promotion program is planned. Design, Raymond Loewy Associates, New York. Cartons, Modern Folding Carton Corp., Brooklyn.



20 The Pioneer Suspender Co. is highlighting its tie-in with the nation-wide Sanka Brown color promotion with this colorful coffee-cup package, which doubles as a counter display, for the Sanka Brown Belt. The coffee-cup package consists of a ceramic mug with the word "Sir" embossed in Sanka Brown lettering, a tag attached to the handle and a tied cellophane wrap.



TOP-HATTED GENTLEMAN replaces dachshund on the new beer label which becomes a companion to the new ale label. The black figure, typifying quality and age, is set against an eye-compelling yellow oval and framed by the regulation wording printed in black. The new neck labels feature the merit award received by the breweries instead of the often-misinterpreted "Spring Water" claim.



Farewell to Frankie

IN LABEL REDESIGN, FRANKENMUTH BREWERY DARED TO THROW OUT A DACHSHUND TRADEMARK ON WHICH MILLIONS HAD BEEN EXPENDED FOR PROMOTION

It takes courage to throw away a package symbol that has cost millions of dollars to build up and that seems, on casual check, to be among the strongest assets a company possesses. A situation of this kind is perhaps even more dramatic if the scrapping of this identification is almost the first step of new management, as was the case with Bruce Berckmans, president of the Frankenmuth Brewing Co., Frankenmuth, Mich.

The identification he scrapped was a dog—a dachshund—familiar on beer labels all over Michigan for the past decade, gaining a popularity that has been sharply accentuated for the past three years through the use of very clever (and very expensive) animated boards. In fact, out in Michigan and Ohio, where Frankenmuth beer is sold, dachshunds are actually known as Frankenmuths! Thousands of these popular pets bear the name "Frankie." The old management even had a project, which was scrapped along with the symbol, to start a dachshund kennel in a vacant lot across from the brewery—a plan that was not at all fantastic since the little village of Frankenmuth has a summer chicken-dinner trade that often caters to 10,000 or 12,000 tourists in a week end.

The scrapping of the dachshund is, of course, only the first phase of this story, but the decision to take this action was in itself so extraordinary that it is worth considerable emphasis. Facts revealed in checking the popularity of the dog could have been very misleading. Field investigation turned up things like families routing their automobile jaunts so that the children could see one of the last animated boards in which an elderly, maternal dachshund was teaching a group of little dachshunds to wag their tails.

Everywhere the following comment was repeated again and again: "You mustn't drop the dogs. They're too clever for words!" But not clever enough to sell beer, apparently. When investigators checked passengers over 21 in the cars routed past the animated dachshunds, the startling fact was revealed that these same motorists had not even asked for Frankenmuth. Furthermore, the idea hadn't even occurred to them!

An interesting angle on the decision to drop the dachshund is that the advertising agency selected by Mr. Berckmans to handle the Frankenmuth account made this the No. 1 step in their recommendations for building sales to match the production ability of the new and ultramodern Frankenmuth brewery.

The dropping of the dog introduced many problems, such as the changing of point-of-sale displays, the dropping of animated boards and the designing of new decals for trucks. But the toughest job was the necessary change of label, as the dog had in the past been a prominent part of both beer bottle and can design.

At the same time, it was important to retain certain factors which would aid former customers in recognizing the product. By good fortune, however, the dog had never been used in connection with Frankenmuth ale, a product that is very successful in Michigan—in fact, is the state's largest-selling ale. The ale bottle bears a distinctive label of an old-time gentleman in top hat holding in his hand a foam-topped mug of the beverage. A dual advantage was accomplished through the use of this figure to replace the dog on the beer label. First, it established a common identification for the Frankenmuth ale and Frankenmuth beer so that each product tended to support the other. Secondly, since the problem was to increase the acceptance of the beer, association with the fast-selling ale seemed advisable.

To maintain continuity with the previous label, the former oval shape was retained. However, change was introduced into the lettering of the word Frankenmuth to make it more readable. It is possible that in the future still further changes will be made in the interest of simplification and legibility. Readability, in this case, is very important because of the length of the name. However, too great a change in a single step was avoided in the interest of easy association with the former label.

The illustrations of the bottles show both the old and new labels. As is so often the case when designs are improved, the simplicity of the new label is probably its greatest advantage. The incidental and legal wording required ("Made From Finest Brewer's Grains and Hops. Brewed & Packed At Frankenmuth, Mich., by The Frankenmuth Brewing Co. Contents 12 Fluid Ounces") has been arranged to form an oval whose visual characteristic when viewed on a shelf or counter is that of a decorative line. The words, of course, are readable, but the observer would not read them unless he was interested in their message. On casual observation they are simply a design which helps focus attention on the words, "Frankenmuth Premium Dry Beer." The use of the dark background serves the same purpose by simply fading into the natural background of the bottle—again increasing the emphasis on the yellow oval as an attention getter.

As the label is studied more closely, it becomes very evident that the old-time gentleman in top hat was a very happy selection for this present label design. The figure itself is simple enough to lend itself to the small reproduction the label requires. The old-time atmosphere gives an air of stability and long-established tradition helpful in marketing a beverage such as beer. The high hat is also expressive of quality which is valuable in presenting this beer as a product of one of the most modern breweries.

The greatest advantage in the new labels, according to the company, is undoubtedly the family resemblance obtained in the beer and ale bottles. The red, yellow and black previously used in Frankenmuth labels have been maintained. But in the new labels, yellow is the background color in both cases and the treatment of the name Frankenmuth in bold black is also identical. It is thus fairly certain that this attractive label is getting the many friends Frankenmuth has built up through the years to recognize quickly the new label as a companion Frankenmuth product.

An important factor in the marketing of any bottled beverage is the neck label. In the past, the Frankenmuth neck label had been used to emphasize the exceptionally fine spring water used in brewing all of Frankenmuth's products. Investigation showed that in many cases this reference to water was misunderstood by potential customers and often made them look on Frankenmuth as a diluted product. The importance of this issue was not a deciding factor, however, in changing the Frankenmuth neck label to its present design, as a need came up for capitalizing on an award given the Frankenmuth Brewery. Frankenmuth has one of the world's most modern breweries and its leading position among such processes and equipment led to the presen-

(*This article continued on page 195*)

TAKE-HOME 6 handy carrier to build up residential trade is also introduced as part of modernization program. New label is reproduced on beer and ale cans, the same as on the bottles, except that it has been enlarged to meet can's area requirements.



BACK-BAR DISPLAYS such as this one, as well as all point-of-sale material, billboards, shipping cases and delivery-truck decals had to be redesigned to rid the company of the dog trademark.



Packaging Institute program

LAST-MINUTE CHANGES IN 12TH ANNUAL FORUM, TO BE HELD OCT. 23–25, SEEK TO KEEP IT IN STEP WITH FAST-CHANGING SUPPLY PICTURE

Members of the Packaging Institute will meet for their Twelfth Annual Forum at the Hotel Commodore, New York, Oct. 23–25, at a time when prospective shortages of packaging materials—due to burgeoning production as well as the re-armament program—have created intense interest by the industry in conservation and possible substitution.

Because of the rapidly changing situation, according to Institute officials, the program has been considerably revised from that which was outlined in the last issue of MODERN PACKAGING.

Each of the scheduled talks will be adapted to fit the current supply situation and there will be greater emphasis on the requirements of military packaging.

One of the features will be an address at the first-day luncheon meeting by Roy Segur, in charge of Containers and Package Planning for the National Security Resources Board, Washington, D. C., who will explain the board's plans for control of packaging materials.

Supply outlook

The first morning's session on Monday, Oct. 23, will bring together a group of authorities to discuss the outlook for packaging supplies in view of the latest developments up to that moment.

Although two hours have been allotted to this session, it is planned to continue the group discussions into the afternoon if a sufficient number of visitors want it. The afternoon session, however, would have to run concurrently with a program which has been scheduled on Controls, Specifications and Military Packaging.

Because of the expanded program on emergency subjects, it appears that there may be several conflicts of concurrent meetings and, in view of this, the Program Committee, headed by E. H. Balkema of Colgate-Palmolive-Peet, suggests that each interested company have at least two representatives present at the Forum so that no opportunities which may be of value will be lost.

Military conferences

There are plans for private conferences with the military people on Tuesday morning, Oct. 24. If these plans mature satisfactorily, Government speakers will be on hand in a conference room for those who may wish to ask specific questions of them privately. The outcome of this alternative will depend upon the wishes of the members and the availability of the speakers.

Control of packaging quality will be the subject of a session on Tuesday morning, Oct. 24, with E. H. Balkema presiding, covering the problems of reproducing uniform packages economically, especially where there are several sources of supply which must be utilized.

Petroleum packaging

An all-day session on problems of packaging petroleum products is planned by the Petroleum Committee of the Packaging Institute. This committee meets regularly every 60 days and has developed many advanced packaging ideas, especially in its studies of economics and controls. Although the primary products under discussion are petroleum derivatives, anyone who is engaged in packaging of liquid products will be interested in this meeting.

Technical sessions

The two technical sessions, Oct. 24 and Oct. 25, will be concerned with reports on special research projects undertaken by several companies, such as: a short cut to moisture equilibrium data; a way to measure odor transfer through packaging films; a way to predict the performance of a paper bag from a study of the flat paper from which it is made; a way to evaluate the retention of CO_2 by crown closures and a way to measure nitrogen retention in flexible packages. Scuff resistance and electronic controls are subjects that will also be discussed at these sessions.

John A. Warren of American Home Products Co. has organized a seminar for production people on problems in high-speed packaging. Glass lines, carton lines, squeeze-bottle and can lines will be covered. Production men and foremen are particularly invited to attend this seminar.

The Drug and Pharmaceutical Committee meets regularly every 30 days and has a number of task groups at work on assigned problems. These problems will be the basis for the discussions at the seminar on Oct. 25 where some 300 persons are expected to be present. Progress will be reported, plans made and suggestions will be received.

Committee meetings on Oct. 25 will be open to visitors. Ten of the Technical Committees of the Packaging Institute will be in session on Wednesday afternoon, Oct. 25, and a new committee, the Printing Committee, will have its organizing meeting at that time. Anyone who has registered for the Forum may attend and listen to these discusssions.

The Institute's Paper Committee and the Food Committee will give consideration to the results of comparative experimental tests.

Schedule of registration fees is as follows: entire convention—for members, $10; for non-members, $15; one day—for members, $5; for non-members, $8; one-half day—for members, $3; for non-members, $5.

On Wednesday noon the Technical Luncheon is to be addressed by the retiring and incoming chairmen. Tickets for this and for the Monday luncheon are each $4.

The banquet on Tuesday night, preceded by cocktails and a reception, will be at $12 a plate. Tables of 10 may be reserved up to Oct. 10 by placing the necessary order with the Packaging Institute, 342 Madison Ave., New York 17, N. Y.

12TH ANNUAL FORUM, THE PACKAGING INSTITUTE

MONDAY, OCTOBER 23, General Sessions—West Ballroom

10:00 Opening address—**Opportunities and Obligations,** CHARLES L. BARR, *President of the Packaging Institute*
10:30 Report of Nominating Committee
10:40 Seminar—**Outlook for Packaging Supplies,** LEE R. FORKER, *Quaker State Oil Co.,* and panel
12:30 Luncheon—East Ballroom. **Containers in a Semi-War Economy,** ROY F. SEGUR, *in charge of Containers and Packaging Planning, National Security Resources Board, Washington, D. C.*
2:30 **PACKAGING AND REARMAMENT,** HERBERT T. HOLBROOK, *Standard Cap & Seal Corp., presiding*
1. Can We Expect Government Allocation of Packaging Materials? CHARLES A. LEWIS, *U. S. Dept. of Commerce*
2. Organizing to Handle the Military Packaging Problem, COL. R. A. HOWARD, JR., *Chief of Procurement Methods, Munitions Board*
3. The Status of Military Packaging Specifications, CLINTON K. ROYCE, *Office of Naval Material*

TUESDAY, OCTOBER 24 (Concurrent Sessions)

West Ballroom

9:30 **REPRODUCTION AND PACKAGE PRINTING,** E. H. BALKEMA, *Colgate-Palmolive-Peet Co., presiding*
1. Give Suppliers "The Dope," MARSHALL BALDWIN, *Colgate-Palmolive-Peet Co.*
2. Plate and Cylinder Making, JACK LOMAX, *Reilly Electrotype Co.*
3. Ink Making, GEORGE WELP, *International Printing Ink Division, Interchemical Corp.*
4. Making and Printing of Paper and Board Stock, WALTER SOOY, *Gardner Board & Carton Co.*
5. Container Quality From the Purchasing Viewpoint, EDGAR E. RUMPLE, *Merck & Co., Inc.*

2:00 **TECHNICAL SESSION,** KENNETH R. MARVIN, *Eastman Kodak Co., presiding*
1. Testing and Controlling Adhesion, DR. L. E. SIMERL, *Marathon Corp.*
2. Electronics in Packaging, ROGER L. MERRILL, *Battelle Memorial Institute*
3. Scuff Resistance, R. D. HEAD, JR., *International Printing Ink*
4. Testing for Impact Fatigue, ROBERT DE S. COUCH, *Research Department, General Foods Corp.*

6:00 Reception and Cocktail Party—East Ballroom Foyer
7:00 Banquet—East Ballroom

Parlors B & C

9:30 **PETROLEUM PRODUCTS PACKAGING,** R. CHESTER REED, *Texas Co., presiding (Chairman of Petroleum Committee)*
1. Mechanical Handling and Warehousing of Small Packages, F. M. LANDON, *Sun Oil Co.*
2. Standardization for Palletizing, C. L. LOCKHART, *Shell Oil Co.*
3. Economics of Stenciling, Labeling and Marking
(a) Labels: G. E. STEEVER, *Atlantic Refining Co.*
(b) Decalcomanias: EDWARD THOMAS. *Shell Chemical Co.*
(c) Stencils: FRANK T. MARSHALL, *Texas Co.*

10:00 **Parenteral Closures Committee**—*Parlor E*
2:00 **PETROLEUM PRODUCTS PACKAGING** (*Continuation of Morning Session*)
4. Statistical Control of Liquid Filling (*Speaker to be announced*)
5. Export Shipping Cases for Petroleum Products, PAUL PAULSEN, *Wm. H. McGee Co.*
6. Packaging for the National Military Establishment, CLINTON K. ROYCE, *Office of Navy Material*

WEDNESDAY, OCTOBER 25 (Concurrent Sessions)

9:30 **TECHNICAL SESSION,** DR. L. E. SIMERL, *Marathon Corp., presiding*
1. Rapid Graphical Method of Measuring Moisture Equilibria, ARTHUR H. LANDROCK, *Food Technology Department, Massachusetts Institute of Technology*
2. Method of Measuring Organic Vapor (Odors) Transmission Through Packaging Films, T. J. MULDOON, *Research Department, General Foods Corp.*
3. Testing Crown Closures, H. E. BROCKETT, *Research Department, Continental Can Co., Inc.*
4. Practical Factors in Nitrogen Packaging in Flexible Films, W. S. WALKER, *Chemical Engineer, Linde Air Products Co.*

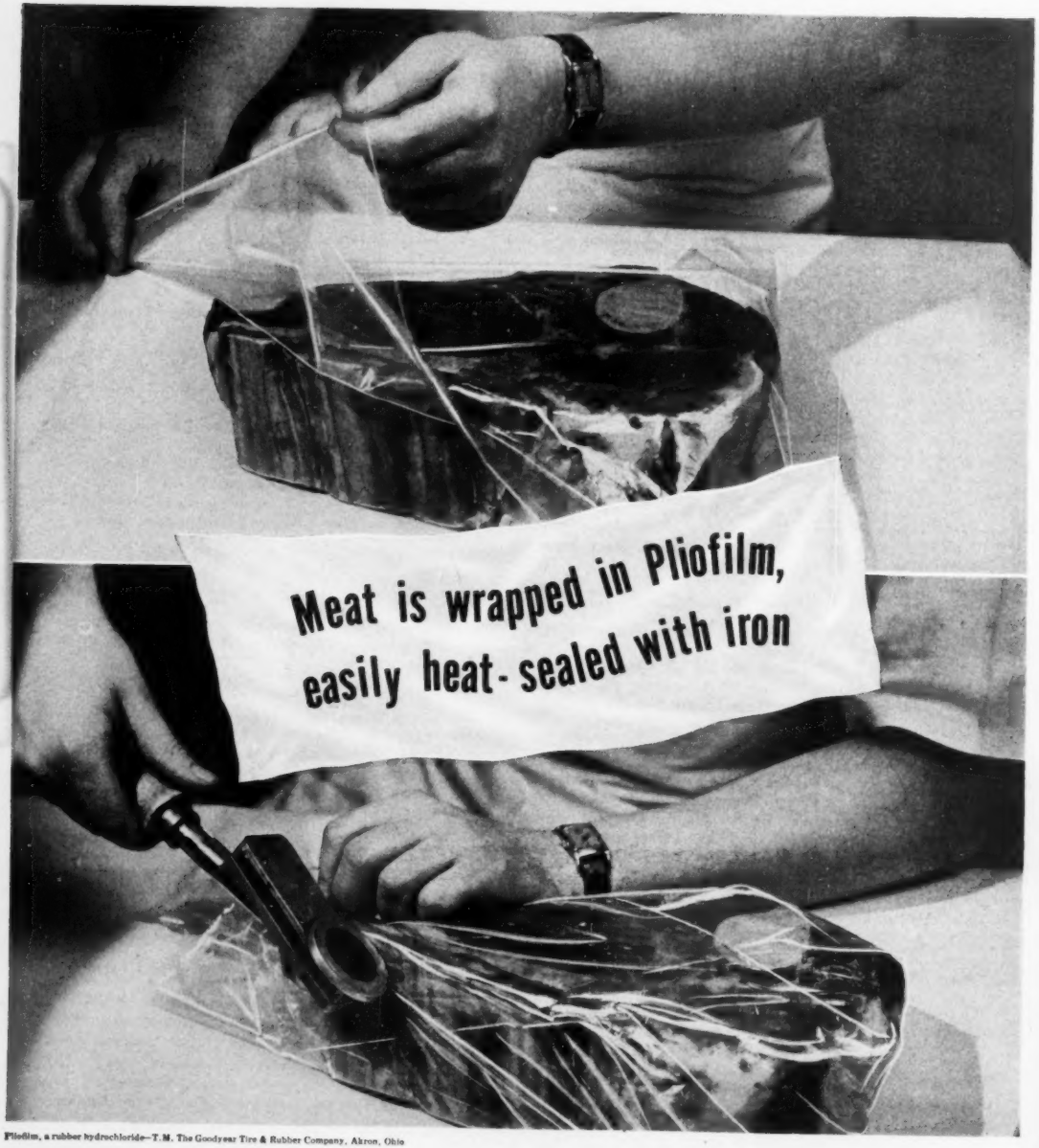
9:30 **SEMINAR ON HIGH-SPEED PACKAGING,** JOHN A. WARREN, *Engineering Department, American Home Products Co., presiding*
1. Glass Lines, J. KENNETH DOTTS, *Joseph E. Seagram & Sons*
2. Carton Lines, WILLIAM T. SCHOMMER, *General Mills*
3. Squeeze-Bottle Lines, A. A. BERNHARDT, *Pharmacraft Corp.*
4. Tin-Can Lines (*Speaker to be announced*)

12:30 Technical Luncheon—East Ballroom, *Chairman* C. L. BARR, *President of Packaging Institute;* ROBERT DE S. COUCH, *Retiring General Chairman of Technical Committees;* F. S. LEINBACH, *Incoming General Chairman of Technical Committees*

West Ballroom

2:15 **DRUG AND PHARMACEUTICAL SEMINAR,** H. E. NACK, *Sharp & Dohme, presiding (Chairman of Drug and Pharmaceutical Committee)*
1. Screw Cap Problems, CARL B. BURNSIDE, *Eli Lilly Co.*
2. Important Factors in Glass Breakage (*Speaker to be announced*)
3. Inspection of Incoming Packaging Supplies, F. H. BITHER, JR., *Upjohn Co.*
4. Export Packaging, DR. JOHN C. BIRD *and* R. J. HENNESSY, *Lederle Laboratories*
5. Shelf Packs, ARTHUR R. SCHETTEL, *E. R. Squibb & Sons*
6. Package Style Designed to Facilitate Resale on Prescription in Original Containers, DR. DAVID ASHKENAZ, *Wyeth, Inc.*
7. Unusual Foreign Packages, H. E. NACK, *Sharp & Dohme*

Presenting: a tougher, tighter,



Pliofilm, a rubber hydrochloride—T.M. The Goodyear Tire & Rubber Company, Akron, Ohio

self-service package

for cut meats and other odd-shaped products

-the new FM-1 Pliofilm

order today!

IRREGULAR shaped objects your packaging problem? The answer's all wrapped up in the new, stronger **FM-1 Pliofilm.** Just look what it does for meats:

1. It's tough and rugged, won't shatter or run. Invites customer handling and inspection. Double wraps are completely eliminated, re-wraps reduced 95% — saves labor and material cost.

2. **FM-1 Pliofilm** preserves the "bloom" of fresh red meats. And it's just as good for luncheon meats and smoked meats.

3. It permits tighter wraps — can even be stretched over irregularly shaped and jagged cuts.

4. It eliminates unsightly wrinkles. Easy to wrap and heat-seal. Either side of film can be used.

5. **FM-1 Pliofilm** is "non-fogging." Showcase glare is diminished, giving meats a more natural look.

You'll find this new **Pliofilm** ideal for any product requiring a strong puncture-resistant wrap with controlled moisture-protection. Write for complete information to Goodyear, Pliofilm Dept., Akron 16, Ohio.

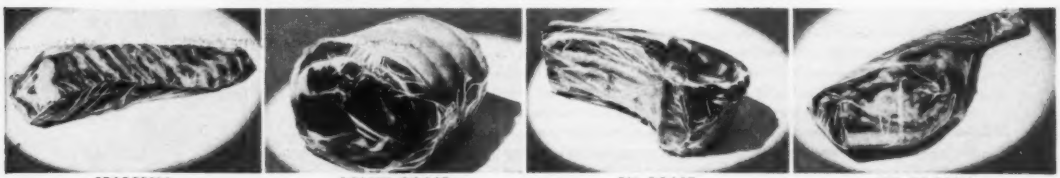
Good things are better in

Pliofilm

GOODYEAR PACKAGING FILM

3-way protection against air, moisture, liquids

Even sharp bones won't puncture this rugged film



SPARERIBS ROLLED ROAST RIB ROAST LEG OF LAMB

DISPLAY

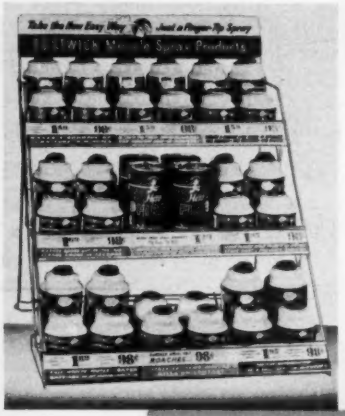


This combination display and self-service floor unit used by the National Tea Co. food stores, Chicago, displays silverware encased in transparent plastic shaped to fit the contours of the knives, forks and spoons as a protection against tarnishing. Shoppers select the packages desired from the clearly marked storage bin. The corrugated display, rigidly reinforced to sustain the weight of the silverware, is shipped flat. Price cards are detachable. Display, Display Division, River Raisin Paper Co., Detroit, Mich.

A complete department for display of Bostwick Laboratories' aerosol sprays is provided in just 17⅞ by 18 in. of space by this self-service metal counter unit designed to increase impulse purchases. The experience of more than 250 stores indicates that average unit sales of the products jumped from between 1.4 and 1.7 to 3.4 dispensers per sales ticket when displayed this way. Display, Manhattan Wire Goods Co., Inc., New York.

Purpose of this display for "Handee" sharpening stones, manufactured by Chicago Wheel & Mfg Co., is to bring the product up front in hardware stores and other retail outlets. The full-color printed display card holds 20 pocket-sized sharpening stones individually packaged in heat-sealed glassine bags. Display card, Irving Woolf & Co., Chicago. Glassine bags, Century Engineering Co., Chicago.







A strikingly realistic "Treasure Chest" made of paperboard and lithographed in full color, is currently being used by Cannon Mills as a dealer tie-in with the four-color double-page *Life* ad of the same theme. The display measures 20 by 12 by 8 in. from the "brass-bound" base to the rim. The display is shipped flat and is easily assembled. Dealers use their own discretion in stocking the chest with Cannon towels, sheets, etc. Display, Einson-Freeman Co., Inc., Long Island City, N. Y.



With eyes the center of make-up attraction and the tremendous increase in use of eye make-up, Revlon has introduced an entire line of mascara, eye shadow and eyebrow pencils conveniently displayed in this counter unit for easy selection. Beneath the glass face of the unit is a chart tying in the complete color range of the products with costume colors, with individual packages—mascara, eye shadow and even refills in tortoise-shell plastic cases. Display, Merit Display Card Co., New York.

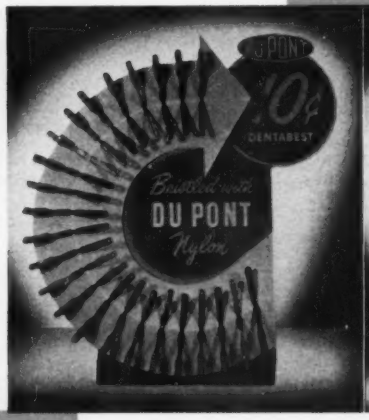
GALLERY

This point-of-purchase display introducing Flamingo Frozen Orange Juice, marketed by Douglas Leigh, the Broadway "spectacular" king, is patterned after the modern art mobiles, the new art form. Components of the Flamingo "mobile" are paperboard cut-outs suspended by delicate nylon threads. Attached to the ceiling or a lamp cord, the unit is kept circling constantly by the air currents in the store. It is claimed that the display attracts more than eight times the attention of a stationary display.



A sales increase of 645% in one day of sales has been reported by one food store featuring an island display of this giant-sized Circus Basket merchandiser for Necco Wafers, product of the New England Confectionery Co. In the same day, the store showed an additional increase of 148% at check-out stations. The basket is 3 ft. high and 2½ ft. wide. A similar basket in counter size is also available. For the giant basket a new wrapping of six regular-sized rolls of Necco wafers in a cellophane-overwrapped tray was introduced. Display, Forbes Lithograph Mfg. Co., Boston.







Two new lithographed paperboard point-of-sale displays have been brought out for "Back to School" promotion of Du Pont tooth brushes in two different price ranges. For the Dentabest brushes, a large eye-catching arrow pointing to the 10-cent price mark is slotted to hold 24 brushes. Side pieces are available displaying 12 brushes each. The Park Avenue brushes in individual containers are featured in a streamlined display, with its uncluttered, crisp appearance conveying the impression of a luxury item priced at 25 cents. Displays, Consolidated Lithographing Corp., Brooklyn, N. Y.



Watch bands displayed in a jewel-like setting combining velvet and plastic have been introduced by the Gemex Co. The display is made in two sections, the fan panel and the base and back-easel member. For shipment, the fan section slips out and the back and base unit folds flat. The entire unit is covered with royal blue velvet; the cellulose acetate signature plaque is navy blue, gold stamped. Covered wire loops hold the bands in position. Design, E. C. Tickner, Millburn, N. J. Display, Walter Allen Co., Providence, R. I.

Polyethylene for



1. FIRST STEP is placing polyethylene liner over mandrel for insertion.



2. METAL DISK dropped in bottom of liner is alternate method.



3. MANDREL is put in drum, then removed, leaving liner in position.

Packagers and customers alike are, in many cases, realizing more profits through the use of polyethylene liners and linings for bulk shipping containers. Manufacturers of hard-to-package and handle items, such as corrosive, volatile and high-viscosity products, are making use of film liners and interior coatings in all types of steel and fibre containers.

The trend to polyethylene linings in the chemical, food and petroleum industries has been one of the most significant packaging developments of recent months. The importance of this ready acceptance may be gauged by the fact that these industries account for 49.2% of the total consumption of all the steel drums, barrels, kegs and pails produced. For the first quarter of 1950 total shipments of steel containers were 21,677,070 units—an indicated consumption for the year of 86,708,000 units. In 1949 a total of 17,500,000 fibre drums was produced and shipped, with a probable increase expected for 1950. The potential market for liners for both types of containers is, therefore, tremendous.

The reasons for the trend toward liners are not hard to find. The advantages include increased product protection and cleanliness, the elimination of costly cleaning and reconditioning in the case of steel drums and a reduction in shipping charges because lighter-weight containers can be used. Eventually, the use of liners should make possible cheap, non-returnable drums of light-gauge steel. Work in this direction is under way.

With prefabricated liners of strong polyethylene films, product recovery is practically 100%, even with such difficult items as automobile undercoatings. This is due to the fact that, at present, no adhesive for polyethylene is known; thus even the most viscous substances can be removed with ease. Then, too, when prefabricated liners are used, they can be removed from the container and squeezed like a tooth-paste tube until empty. Because of elimination of cleaning and reconditioning operations, drums can be kept in continuous service and inventories reduced.

In many cases, the polyethylene lining eliminates a serious problem of reaction or corrosion caused by chemical products coming in contact with container walls. It eliminates the need for special alloy metals and glass or rubber liners.

In some instances, the principal advantage of the polyethylene liner is in convenience to the customer in use of the product and, in such cases, drum users report that they are being forced by customer demand to use the liners even though it represents additional cost which they must absorb.

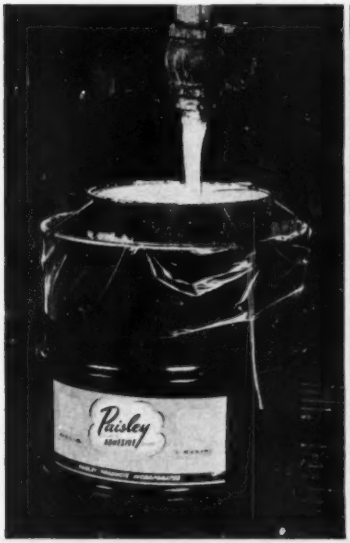
Types of liners

There are two general classifications of polyethylene liners presently in use in the packaging field: (1)

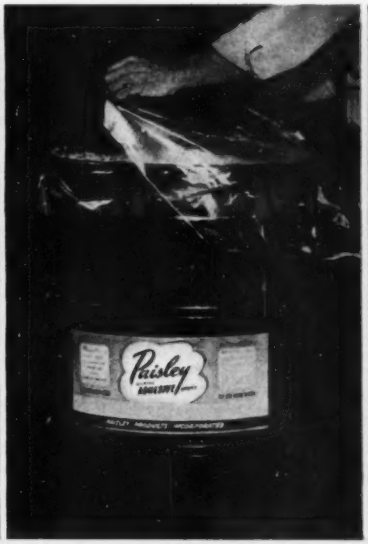
shippers

VARIOUS TYPES OF LINERS AND COATINGS FOR STEEL AND FIBRE

SHIPPING CONTAINERS ARE PROVING USEFUL FOR BULK PRODUCTS



4. FILLING ADHESIVE into the liner. Tube over the edge prevents air pockets.



5. SHEET OF POLYETHYLENE covers filled drum. Liner is folded over edge.



6. HEADER COVER is sealed on the container as the final step.

liners which are inserted as separate, prefabricated units into the conventional steel or fibre containers; (2) liners which form an integral part of the container. According to the method of application and the type of container, the latter classification is subdivided into (a) polyethylene laminations to the kraft linerboard with subsequent fabrication of the fibre container and (b) spray-coat applications of the plastic to the interior of steel containers.

The choice of the type of liner best fitted for the job is dependent on the nature of the product to be packaged and whether a steel or fibre container is required.

For use with high-viscosity substances, the removable polyethylene liners offer ease of handling and good product recovery. Generally speaking, however, where repeated usage is the prime objective, the permanently coated linings are said to be more economical—the separately inserted



7. ADAPTABILITY of liner to the fibre shipping drum is shown above.



8. CHOCOLATE BEVERAGE mix retains its flavor in polyethylene.



9. SEATING LINER by means of a mandrel, drum is prepared for filling at Scholler Bros., Philadelphia, manufacturers of textile soaps, softeners, etc. The company has adopted the liner package in response to customer preference even though it has meant an added cost which the company itself had to absorb.

liners being intended principally for one-way service.

Prefabricated liners with both types of shippers are used for adhesives, petroleum products, laundry chemicals, dairy products (liquid or frozen cream, ice-cream mixes, etc.), fresh-frozen meats and meat products in brine, bulk frozen fruits and vegetables, ready-peeled potatoes, etc. One company also reports the use of these liners in conjunction with a fibre container for shipment of small quantities of non-dangerous liquids. Polyethylene-laminated fibre drums have been used successfully for moderately corrosive substances, usually in the solid or semi-solid state, for animal feeds, powdered milk and eggs, dry, hygroscopic chemicals, etc. The spray-coated steel containers find principal application as packages for liquid corrosives such as hydrofluoric acid, sodium hypochlorite solutions, formaldehyde, acetone and gasoline, as well as hard-to-package edible compounds.

Separate prefabricated liners are used with removable-head steel and fibre drums, hackneys, buckets and rectangular fibre containers. The polyethlyene film is received from the supplier in the form of a continuous tube. The bottom end is usually closed into an envelope-type bag by electronic or other sealing processes or, in some instances, by mechanical means. Recent developments—namely a new electronic sealing process—have resulted in the introduction of a "contoured" liner with a separate circular piece of film sealed into the bottom of the tube, thus matching the form of the container.

The packager can purchase the liners already fabricated, or he can buy the tubing and perform the end-closing operation himself. The liners are generally oversized in all directions so that the weight of the product will not exert excessive strain on the film. This also allows the top of the liner to be folded over the container edges during filling and provides adequate space for a tie-off closure.

There are a number of ways by which the liners are inserted into the containers: hand placement, use of a mandrel (usually a hollow cylinder open at both ends and slightly smaller than the container), use of low-pressure compressed air to fill out the bag or by inverting the oversized liner over the container and letting the weight of the product carry it to the bottom of the container.

Top closure is accomplished either by tying off the "neck" after expelling the air or by keeping the top of the liner folded over the container and, by means of a separate piece of film, effecting a seal with the attachment of the metal top. Latest developments are featuring sealed-in film spouts which coincide with the openings in bung-type buckets and barrels. There is also available a molded-polyethylene pouring attachment with separate screw-cap closure which can be permanently attached to the metal tops of steel buckets and pails.

Typical users

Among the pioneer users of prefabricated liners is Paisley Products, Inc., in its New York and Chicago plants, for shipping high-viscosity adhesives in metal drums. The separate liner, affording added protection against product evaporation and insuring product purity, has eliminated costly reconditioning operations which were formerly necessary. Instead of requiring hand scraping and cleaning, steel drums can be kept in uninterrupted service, thereby reducing inventories. Also, the use of the flexible film has proved of great advantage to Paisley customers by raising product recovery to virtually 100%. Reports have indicated as high as 15% greater product recovery over older shipping methods.

In preparation of the shipping drums, Paisley inserts the liners by means of a mandrel, folding the top of the liner over the container rim. After filling, the top is twisted to exhaust the excess air and the "neck" tied and allowed to untwist, leaving sufficient head space to prevent liner damage during transit.

Scholler Bros., Inc., Philadelphia, also use a similar set-up for shipment of textile soaps, softeners, finishes and specialties. These products vary in properties from thin, free-flowing liquids to heavy, viscous, gelatinous pastes and from mild acid to alkaline reaction. Scholler receives the envelope-type liners sealed by a pressure-heat process. The company formerly used a reconditioned, side-opening, bung-type steel drum which cost approximately 40 cents less than the removable-head-type drum which is now necessary. In addition to this is the cost of the liner itself, which is said to be approximately 47 cents—the all-over increase for the new package amounting to $^1/_2$ cent per pound. This expense has been absorbed by the company, Scholler officials say, because of customer preference for the increased purity and convenience which has been brought about by use of the liner.

Hooker Electrochemical Co., Niagara Falls, N. Y., is using the separate liners for packaging monochloroacetic acid—a white, crystalline material in the free-flowing state. This important industrial chemical was formerly packaged in wax-lined-stave or wax-lined-plywood barrels because of its corrosive nature. By adapting the polyethylene liner, the company has been able to make considerable savings in the cost of the shipping containers as well as in actual shipping costs because of the lighter weight of the fibre drum they now employ. Hooker receives the film in the form of a continuous tube and fabricates the liner

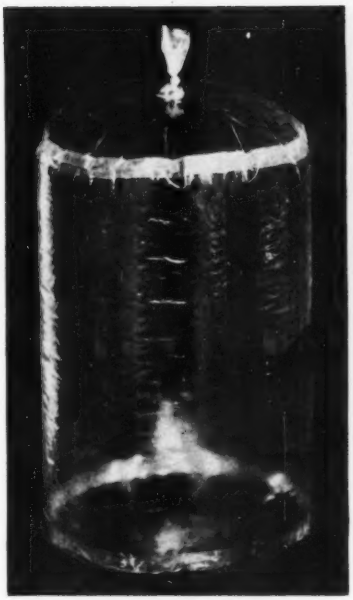
at the plant. The tubing is cut to length and the bottom sealed by means of a rubber band. The liner is inserted into the fibre drum with the aid of compressed air and final closure is made by another rubber band. The company found that, in addition to simplifying handling and shipping, the protective liner assures a pure product, prevents deterioration of the package and keeps the product in good condition for use even after lengthy storage.

The newly developed "contoured" liner is being used in conjunction with both fibre and steel containers by the Richards Chemical Co., Jersey City, N. J., for its liquid to semi-paste products. The new electronic sealing process employed by the supplier is used to join 4-mil-gauge walls of the polyethylene tubing to a flat, circular end piece. The diameter of the tubing is slightly larger than that of the container to eliminate excess strain on the film.

With the circular-shaped base, these liners, tailored to fit a range of containers from 5- to 55-gal. size, are made completely concentric with the drums, allowing more efficient packing and increased weight by eliminating product waste between the folds and creases.

Each liner comes individually packed, rolled up, with a pressure-sensitive-tape seal—a factor which is said to simplify placement. Insertion is accomplished by holding the liner by the top and letting it unroll into the container—the liner finally seating itself as it is filled. In addition to those for the full open-head drums, liners are now made by the new process to accommodate bung-type pails and drums. This is done by the inclusion of a pouring spout as an integral part of the liner which corresponds to the opening in the shipping container.

At present, shipments of liquids are generally limited to steel containers. However, the Richards company reports the use of the 5-gal. polyethylene fibre container for non-dangerous liquids. This combination of a fibre container and liner for the shipment of liquids is being subjected to intensive evaluation through rail and truck shipment under control of the I.C.C. and the Assn. of American Railroads. Once this combination has proved itself, the Consolidated Freight Classification regulations, it is reported, will be amended to permit shipment of dangerous liquids in this type of container.



10. "CONTOURED" LINERS fabricated by new electronic sealing process for use with fibre and steel drums can be made to accommodate bung-type pails and drums. These liners, used by Richards Chemical Co., Jersey City, N. J., come rolled up, are inserted by holding top and letting them unroll in drum.



11. POUR SPOUT of polyethylene can be combined with "contoured" liner to provide a continuous lining of inert plastic material for corrosive-liquid containers. Another method of closing the liner is simply to tie off the "neck" after having dispelled excess air.

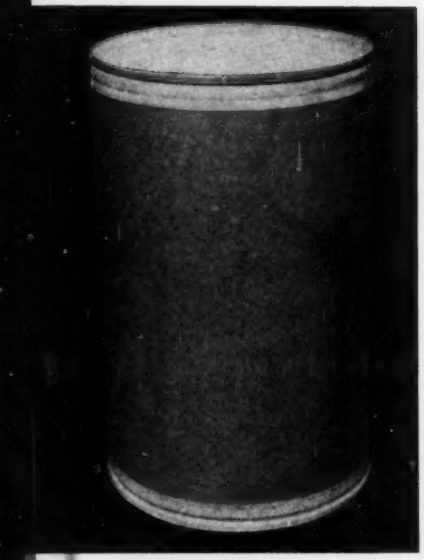
Impressive savings as a result of the use of prefabricated liners with fibre drums in place of heavier containers have been reported by one supplier of the film liners. On a typical shipment from Chicago to New York, this company outlines the economies of low-tare containers. In comparison with former container tares per car of 7,500 lbs. or $147, the fibre containers and liners showed a tare of 2,100 lbs. or $41.46 per car—a saving in shipping costs per car of 5,400 lbs. or $105.84. This reduction in tare weight, amounting to 66%, has brought annual savings exceeding $50,000 to one shipper of frozen strawberries.

Lamination and coatings

For bulk packaging of food products and dry chemicals, where the degree of corrosion resistance pro-



12. PAILS lined with polyethylene are used by Atlas Powder Co., Wilmington, Del., for quaternary deodorant. In addition to interiors, the contact areas of open-head metal drums, hackneys and pails are coated—eliminating the danger of contamination due to chime failure.



13. FIBRE DRUM, polyethylene lined, is made by laminating the plastic to bleached kraft linerboard, with subsequent fabrication of drum. Less-expensive method is by hot-melt application.



14. APPLYING polyethylene lining by means of flame spray gun. In addition to tanks, the spray-gun method is used to coat the interiors of the open-head type and some styles of bung-type metal shipping drums and pails.

vided by the separate liners is unnecessary, the polyethylene-lined fibre drum is finding wide acceptance for other reasons. This open-head container, developed by a large can company, is designed for repeated use.

In this type of container, the polyethylene is applied either by lamination or by hot-melt application to the bleached-kraft linerboard—the latter being the more economical method. This coating operation is done by paper converters and the linerboard is then sent to the container fabricators. The container is made in the conventional way with the precoated linerboard; thus the lining forms an integral part of the container.

From the standpoint of economy, this type of container is slightly more expensive than the plain fibre drum with the separate liner because of the more costly fabrication process. But of course there is no liner to be replaced in re-use.

Spray-lined steel drums

For shipments of highly corrosive liquids, steel drums with permanent linings of polyethylene are said to afford adequate protection at substantial savings. Manufacturers of these containers claim that they are suitable for materials which formerly required such expensive mediums as stainless steel, aluminum, monel, glass and rubber-lined containers.

The present methods for applying the continuous permanent coatings of polyethylene to the interiors of steel containers are represented by the two companies which developed them.

One method consists of applying the polyethylene in powder form by means of a flame spray pistol. The polyethylene is liquefied under heat and pressure and sprayed onto the drum interiors to form a seamless lining. The company is prepared to supply the coated drums according to customer specifications, or will apply linings to customers' containers—including tanks, pumps, agitators, etc.

The standard thickness for a nonporous lining is $^1/_{32}$ in.—at least 10 times the thickness of prefabricated liners, it is said—and thicker coatings are available. These coatings are tested with a 15,000-volt spark and guaranteed non-porous. Where this property is unnecessary, the company supplies linings as thin as 0.006 in.

This firm supplies 12-gauge steel drums (open-head type) in 30- and 50-gal. capacities; also 30- and 55-gal. 18-gauge standard drums. Vinyl coatings are applied to the exteriors at no extra cost as protection against spilling and dripping. The company also makes "closed-type" seamless drums of certain styles. The inside of the cover and the drum is sprayed with the polyethylene coating and the cover heat sealed to the drum. Finally, the clamp ring is locked permanently in place. All contact parts, including the one or more capped or plugged openings in the top of the container, are completely lined with polyethylene.

The other method is a special process, details of which have not been released except that the company says it is not a flame-spray application. Mass production of these lined, open-head steel drums, pails and hackneys was only recently announced.

The liners, applied in a continuous coating, range from 10 to 15 mils in thickness for the pails and drums; the hackney lining is approximately 30 mils thick. The hackney lining is tested with the 15,000-volt spark for porosity. Where permeation occurs in the 4- to 6-mil polyethylene bag liners, these coatings, by virtue of thickness and adhesion to the metal container, have eliminated this fault. Also, accidental material contamination during filling and emptying operations is eliminated, since this container has no air pockets such as are apt to occur when the bags are inserted.

These packages, used in both edible and non-edible industries, are said to be very resistant to mechanical damage due to the flexibility of the lining and its resistance to chipping, cracking and peeling.

CREDITS: ***Figs. 1 to 8**—Polyethylene liners fabricated by Flexible Package Co., Chicago, using "Visqueen" polyethylene supplied by The Visking Corp., Chicago. **Fig. 9**—Liner fabricated by U. S. Envelope Co., Springfield, Mass., of "Plax-pak" film supplied by Plax Corp., Hartford, Conn. **Fig. 10, 11**—"Contoured" liner fabricated by Electronic-Wave Products, Inc., New York, of "Visqueen" polyethylene supplied by The Visking Corp., Chicago; polyethylene pouring spouts molded by Ricke Metal Products Corp., Auburn, Ind. **Fig. 12**—Lining applied by Delaware Barrel Co., Inc., Wilmington, Del. **Fig. 13**—Lined fibre container developed and fabricated by Continental Can Co., Fibre Drum Section, Van Wert, Ohio; converter, H. P. Smith Paper Co., Chicago. **Fig. 14**—Flame-spray application of lining by Schori Process Div., Ferro-Co. Corp., Long Island City, N. Y.*

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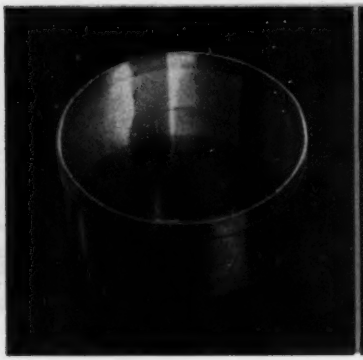
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Western Conference report

EXPOSITION IS EXPECTED TO GO ON A BIENNIAL BASIS, ALTERNATING BETWEEN SAN FRANCISCO AND LOS ANGELES; SUMMARY OF CONFERENCE REPORTS

Final attendance figures for the third annual Western Packaging & Materials Handling Exposition and Conference, held Aug. 16–18 in the San Francisco Civic Auditorium, confirm the tentative total of 5,100 registrations which was announced at the close of the show. Approximately 300 attended the Conference sessions which were held morning and afternoon of the first two days.

Although attendance fell slightly below the totals for the first two years of the San Francisco show, exhibitors generally seemed well pleased with the results obtained. Several reported that the number of business-minded visitors was higher than ever before, and booths were less crowded due to a reduction in the number of idle sightseers. Approximately 100 companies were represented in the exhibits.

While plans have not been formalized at this writing, it seems likely that the Western Show will be placed on a biennial basis, alternating between San Francisco and Los Angeles. Under this plan, the next show would be held in Los Angeles in 1952.

Program chairman for the Conference was Dr. William Rabak of the Western Regional Research Laboratories, U. S. Department of Agriculture, Albany, Calif., assisted by a Conference Council representing the Western Packaging Assn. Chairmen of the Conference sessions were Dr. H. C. Diehl, director and secretary of The Refrigeration Research Foundation, Berkeley, Calif., and W. B. Van Arsdel, assistant director of the Western Regional Research Laboratories. The Exposition was managed by Clapp & Poliak, Inc.

Following is an abstract of Conference papers giving the highlights of each report:

WEDNESDAY MORNING

Chairman, H. C. DIEHL, *director and secretary, The Refrigeration Research Foundation, Berkeley, Calif.*

Problems in Air Transportation—DR. WELDON B. GIBSON, *chairman, Business and Industrial Economics, Stanford Research Institute, Stanford, Calif.* The air-freight industry is a young and vigorous industry, Dr. Gibson stated, and is alone among all forms of freight transportation in its annual rate of growth, averaging about 30% per year for the past nine years. The industry received its first real impetus from the Second World War in that large numbers of low-cost surplus aircraft were available to serve a shipping public that had become increasingly air minded.

Although the domestic scheduled carriers took the lead as early as 1944 in developing the air-freight business, the most significant development in the industry during 1947 and 1948 was in expansion of air-freight services offered by non-certificated and non-scheduled all-cargo carriers. Operating under financial and regulatory handicaps and with opposition at every turn from the scheduled carriers, Dr. Gibson pointed out, these independent operators were carrying by the end of 1947 about twice as much air freight as the 16 major scheduled carriers.

Certification by the Civil Aeronautics Board of four all-cargo carriers in 1949 was a sound decision, as was the creation in 1949 of air-freight forwarders, Dr. Gibson said. While the certificated airlines have opposed some industry developments designed to increase total air-freight movements, these carriers are now actively promoting air-freight shipments and have since 1948 surpassed the all-cargo and non-certificated carriers in volume of service provided. In the long run the certificated carriers will provide a major share of the nation's air-freight service.

During the last several years the Civil Aeronautics Board has issued a number of decisions designed to promote air-freight transportation. The Board has, in effect, attempted to protect the scheduled carriers and at the same time to promote air-freight transportation generally by creating four new all-cargo carriers. In too many instances its decisions, while sound, have been slow in making their appearance, according to Dr. Gibson.

Among the unsolved air-freight packaging, container and materials-handling problems brought to the forefront during the past few years, none is so important as the need for an efficient cargo airplane. Other unsolved problems include the engineering design of so-called "ideal" packages and containers for air shipment, the accumulation of reliable data on lading damage and its causes, and the development of ways and means to reduce the number of times air cargo must be handled, perhaps by increased use of universal pre-packed containers.

In any event, the volume of air-freight traffic will continue to increase to its first objective of one billion ton miles per year, or over five times the total traffic of all air carriers in 1949.

After that time, if air-freight rates continue to decline below the rail-express level, the potential volume may be three or four billion ton miles per year. Such developments cannot but hold important implications for the packaging and container field.

Perhaps the tone of my remarks, Dr. Gibson declared, overemphasizes the need for adequate carrier equipment and deemphasizes the need for improvements in packaging and materials-handling techniques. It is not my intent to minimize the task in the packaging and container field. Certainly the air carriers do not. A representative of the International Air Transport Assn. is quoted as having said recently, "There's a fortune awaiting the man who can do something intelligent about packing materials and containers for transport of commodities by air."

Organic Plastics Feature Trends in Packaging—JOHN DELMONTE, *consulting engineer, Glendale, Calif.* The packaging industry appears on the verge of a concerted growth, in which modern organic plastics will assume a leading role, Mr. Delmonte reported. Whereas in the past the value of new developments in plastics was appraised in terms of the demands of molding, laminating, casting, adhesive and liquid-coating industries, to these have been added the very significant requirements of industries using plastics as unsupported films and as films applied to cloth and paper.

The deleterious influences of gas adsorption, ultraviolet light and extremes in weather conditions are much more significant

upon thin films than thicker sections. This points the way to the need for re-evaluation of properties of plastics in the role of thin films, both before and after exposure to the aforementioned deleterious influences.

Only a small percentage of the high polymers classified as plastics have to date been adapted as films. The necessity for a careful economic appraisal will also prevail, but the packaging industry will find its planning turning not only to problems of non-toxicity, controlled permeability and toughness, but also encompassing new thoughts in terms of color, heat and cold resistance, and electrical insulating qualities.

The public still calls all transparent film "cellophane." Not only is there need for education at the level of the lay public, but there is need for reorientation within the industry. Trade names, particularly the multinumbered trade-name designations such as "QP-43 AT Polythac," can connote no rhyme or reason in the thinking of the industry technician. A functional classification is due soon—*now* preferably, before a deluge of new materials begins to flood the market. Further, chemical identity of new materials should be disclosed so that evaluations may be conducted in the light of past experiences with similar materials.

While there are many liquid products which may be safely contained within polyethylene film, it is not a panacea and careful studies should be made of each new product to be packaged in polyethylene. A simple test which has been employed by one manufacturer seals about 30 cc. of the liquid or chemical in a lay-flat tubing of polyethylene of 0.0017-in. thickness and observes the loss in weight on a day-by-day basis. The speaker has found that placing a sealed sack of the film upon a thin absorbent paper for a certain time interval and holding the paper up for inspection will soon reveal the permeation of non-volatile liquids which will leave an oily deposit on the paper. Mixtures of polyethylene with other polymers, an obvious trend which would be looked for in an attempt to improve the properties of polyethylene, have not revealed too significant results as yet. Data reported for blends with polyisobutylene reveal decided improvements in resistance to gas permeation, such as oxygen and hydrogen, and carbon dioxide, though somewhat poorer results in tensile strength and tear resistance. As yet, there have been no commercially available copolymers with polyethylene, though patent literature gives indication that some of them may not be too far off.

Rubber hydrochloride (Pliofilm) has proved its efficacy in many packaging problems. Recent developments in this field have been toward improved plasticization, such as accomplished with non-extractible resinous plasticizers.

Reflecting the fact that there is no one material for all packaging problems, rubber-hydrochloride films have been tailor made for specific physical properties and currently are produced in 12 different compositions at specific gauge thicknesses. Cooperative developments with packaging-machine manufacturers have extended the use of this material to many diverse products. Highly extendible, resistant to puncture and capable of recovering from severe deformations, the material has qualified for use in the colored-margarine field. Rubber hydrochloride, normally crystalline, becomes amorphous when heated to 225–235 deg. F. Below this temperature, the film may be stretched, achieving recrystallization under controlled heating and stretching. Thin-gauge films prepared in this manner may be applied to the packaging of various products and, after application, retracted to the original dimensions upon the application of a hot-air blast. This phenomenon is made use of in obtaining skin-tight wrappings about food products. The sales appeal of packages prepared in this manner points to increasing utilization of the unique physical properties of this material.

Developments in vinyl packaging films have been so numerous that the uninitiated tend to be confused by the multiplicity of the resinous derivatives employed. Using classifications according to their chemical identity, one may group the various vinyl resins for the packaging field into the following members: (1) Polyvinyl chloride–acetate copolymers (various molecular weights, degrees of polymerization and plasticization). (2) Polyvinyl chloride–plasticized. (3) Blends of polyvinyl chloride and polyacrylonitrile and copolmers of vinyl chloride and acrylonitrile. (4) Polyvinylidene chloride, copolymer with vinyl chloride and copolymer with acrylonitrile.

This list is not complete as there are new developments in packaging materials which will augment the list during the coming year. It is the general consensus among plastics-materials manufacturers that the field of copolymerization and tripolymerization has scarcely scratched the surface of the many latent possibilities and, with the passage of time, new improved versions will be forthcoming.

Recent developments in vinyls are highlighted by the appearance of non-migratory resinous plasticizers and the improved processability of organosol and plastisol formulations. In fact, so important are the latter developments deemed by the plastics industry that in June of this year the annual John Ryatt Award for outstanding contributions in plastics was made to George M. Powell, technical head of the coatings division of Carbide & Carbon Chemicals Co., for his work on vinyl films and coatings.

Polyvinylidene chloride (saran) has always been distinguished by its chemical resistance, solvent resistance and low water-vapor transmission. Available in thin-gauge sheets, it has also made an appearance in seamless, lay-flat tubings, similar to polyethylene. It also serves as a coating for other films less resistant to water-vapor transmission. Copolymerized with acrylonitrile (saran F-120), it has found use as cloth and paper coating, realizing good elongation with small amounts of plasticizer.

Polyvinyl chloride and butadiene-acrylonitrile polymers cast from solution into thin films have been outstanding as margarine packages.

The cellulosics have always figured prominently in the packaging field, commencing with cellophane (regenerated cellulose), which in the early 1920s paved the way for transparent films in the packaging industry. Cellulose esters and ethers, notably cellulose acetate and ethyl cellulose, and now cellulose acetate butyrate sheeting, have established themselves successfully.

Cellulose acetate is known not only as a clear packaging film for dress goods and dry food products, but also in the field of semi-rigid transparent containers. These useful packages, prepared from heavier gauges of sheet stock, not only offer protection to fragile objects such as flowers or certain wearing apparel, but also serve useful functions as an attractive container which will be welcomed by the consumer for storage or display purposes. As semi-rigid sheets, this material may be formed and drawn to specified sizes. The prospects of the immediate future are for continuance in this direction, augmented by color and embossings which enhance the attractiveness of the final package.

Polyisobutylene *per se* or polystyrene film *per se* have not been of significant interest to the packaging field. Polyisobutylenes of sufficiently high molecular weight have been too flexible, possessing a tendency to block, and subject to plastic deformation in the absence of cross-linking agents. Polystyrene films have been too brittle for packaging purposes. The copolymer overcomes the individual shortcomings of both of these polymers and makes available a fine packaging film offering low water-vapor and gas permeability, good compatibility with other materials, heat and solvent sealability and non-toxicity. The films are flexible and strong and have been particularly recommended for dried fruits.

Isobutylene-styrene copolymers may also be blended with polyethylene to form self-supporting films or films for application to paper or cloth. Improved vapor and gas resistance is realized, as well as better heat-sealing qualities. They may also be blended with waxes, combining with paraffin and microcrystalline wax hot melts.

The costs of polytetrafluoroethylene (Teflon) and monochloro-trifluoroethylene (Kel-F) films are far too prohibitive for general consumer use. However, when seeking a packaging material possessing exceptional chemical resistance and heat resistance, no better films can be found. These materials will fit into highly specialized categories—indispensable where their properties can be used to advantage.

Polystyrene films have not made much headway in the packaging field because of their lack of extensibility, though some of the copolymers show considerable promise. Attention should be focused, however, upon recent developments in plasticized, air-drying polystyrene emulsions. Recommended as coatings for papers as textiles, as well as for exterior purposes, the films are claimed to be non-blocking under a pressure of 180 lbs. per sq. ft. at 140 deg. F.

Demands for polyamides (nylon) by the textile industry have absorbed the major attention of the manufacturers of these materials. However, it is significant that major food-processing companies have been experimenting with polyamide coatings for many years on papers and films. One resin produced from dimerized and trimerized linoleic and linolenic acids of soybean oil reacted with ethylene diamine has made notable progress. Improved heat sealing and moisture resistance are obtained.

As packaging materials become better understood and as greater varieties of packaging problems confront the designer, there will be more pronounced trends towards multilaminated constructions, involving more than one film. In some instances a hydrophobic surface in contact with food products may be the right procedure, though low water-vapor transmission and heat sealability may be required in the same package. It is quite probable that some product designs may require more than one material. The final package may embody two or more films possessing the requisite combination of properties. For example, we will find the presence of thin aluminum foil for its extremely low water-vapor transmission in combination with a plastics film, where contact with food products may be necessary. Presumably a thick enough polyethylene could be employed to reduce the vapor transmission to a very low value, comparable to aluminum foil. However, the same effect is achieved in this multilaminate, and at much lower cost, when using a thin film of aluminum in lieu of a thick film of polyethylene.

Real progress in the adaptation of flexible packaging materials will occur as manufacturers undertake a more extensive program of product evaluation and make this material known to the ultimate market, Mr. Delmonte concluded.

Improved Containers and Loading Methods for Perishable Commodities—A. M. FIELDING, *superintendent, Trans-Continental Freight Bureau, San Francisco, Calif.* Railroad transportation of fresh fruits, vegetables and melons, produced so abundantly in the vast agricultural regions of California and Arizona, presents a major problem in protective packaging, Mr. Fielding explained. Three hundred and fifteen thousand carloads of fresh fruits, vegetables and melons originated during the 1949 shipping season in the rail territory served by the Weighing & Inspection Dept. of the Trans-Continental Freight Bureau, which includes California, Arizona, New Mexico, Southern Oregon and the West Coast of Mexico.

The State of California enacted Fruit and Vegetable Standardization Laws many years ago, including container standards prescribing specific sizes and dimensions for standard containers. Comparatively few changes have been made in these standards over a period of years. The efforts of the various fruit, vegetable and melon packers and shippers to maintain a standard packaging for the marketing of their product, coupled with the State standardization requirements, have resulted in highly standardizing a comparatively few different types and sizes of containers.

In retaining these same standards over a period of many years, inherent changes in the commodities and changes in packing methods have tended to reduce or possibly destroy much of the protective packaging that was provided originally in these containers. I am referring particularly to the continued and increasing practice of overpacking or bulge packing perishable containers, a condition that for many years has definitely contributed largely to container failures during transportation and handling and to improper loading with resulting damage to these commodities.

However, the Interstate Commerce Commission has restricted the maximum top bulge for all vegetables packed in these and other containers to a maximum of 1⅝ in., effective Dec. 31, 1950, with the result that research and tests by the vegetable industry have been directed toward the development of new containers and changes in dimensions of the present containers that may bring about a correction of these bulge-packing evils.

"Bulk" packs of tomatoes, 40- and 60-lb. unwrapped packs in unlidded or lidded boxes, made slight headway with a limited number of packers and shippers in California districts during the 1948 and 1949 seasons. However, there is reason to believe that the demands of Eastern and Midwestern repackers may increase the acceptance of this pack during the 1950 season.

Improved loading methods have contributed far more toward reduction in damage to perishable commodities than improved containers or any other factor. One very important development in connection with these improved loading methods is the use of vertical spacing strips between all containers in the car, elimination of car strips and of nailing of car strips to containers. These loads are designed for specific-sized containers and for standard-width refrigerator cars. Containers and spacing units are fitted into precise position during the loading operations and mechanical hand-operated or motor-driven squeeze machines are placed in the doorway of the car in the space to be occupied by the center gate, before the gates are installed, for the purpose of applying pressure to the load in each end of the car, tightening the load and spacing devices sufficient to eliminate all excess lengthwise slack. The top spreaders of the center gate are installed before the squeeze machine is removed or the pressure is removed from the load and the result is a solid, compact load that will protect the containers from any strain or force and prevent any movement of the containers or commodity.

"On-end" loading may present a solution to the problem of cantaloupe and honeydew containers, much the same as did crosswise loading of honeydew crates. While only four cars have been loaded this season by the "on-end" method of loading, all of these cars have arrived at destination without damage and in most instances without a single broken container or slat.

Citrus fruits comprise one of the largest perishable movements from this territory and, like other commodities, they have been packed in the same standard containers practically since the movement started: the standard two-compartment orange box and the standard two-compartment lemon box, and during more recent years, oranges in the Bruce wirebound box. Wirebound containers, developed by the Package Research Laboratory during the past few years for master packaging of consumer bag packs of oranges, have performed very satisfactorily.

I am confident, Mr. Fielding concluded, that much of our experience can be of value to those of you in other industries and in the handling of commodities other than perishables.

WEDNESDAY AFTERNOON

Mr. Packaging Engineer: "Have You Thought of Warehousing, Too?"—HARLAN J. NISSEN, *general manager, Terminal Refrigerating Co., Los Angeles, Calif.* Warehousing is not something that is the concern of somebody else, Mr. Nissen stated. It is your concern, because your boss pays for it and insofar as warehousing becomes expensive by reason of the package

not being designed for good warehousing and good materials handling, just that far have you done an inadequate job.

Bang these thoughts against the background of yesterday. Every time a package comes to rest in multiple units it is being warehoused, whether on the factory floor or the factory warehouse—the public warehouse, a customer's floor or a retailer's back room. If the retailer warehouse foreman kicks about a lousy package, often enough it hurts sales and don't you forget it. Therefore, the warehousability of a package is not just my concern. It is your concern as well.

Labor costs more than 5 cents a minute. Counting the fringes, vacations, waste time and the taxes directly related thereto, probably more. This means that every time a man handles a 10-lb. carton when he could handle a 30-lb. carton, he is only one third as efficient as he could have been.

Part of your job is the integration of new car-lot techniques into your packaged design. Today many big companies are integrating production and distribution at the level of single packages weighing a ton, namely, the strapped, unitized pallet load. The savings are enormous.

The packaging engineer who designs a square package is, from the material handler's point of view, a villain. The common brick isn't shaped that way just by chance. You can't tie or stack square packages.

Have in mind that every new warehouse today is designed around a mechanized pallet. With the improvement in fork design, more multistoried warehouses will be palletized and mechanized. So think over the structural strength of the container, unless your product itself is capable of bearing the weight, because all packages are piled somewhere along this stream of commerce, and crushed packages and waste of space are the result.

Be sure that the sum total of the inner packages is accurately calculated in figuring the outsize of the outside container. Every warehouse, and possibly your customers, has received cases where there is an unfilled space at the top of the container. A ride on the train or the jouncing of a truck will cause these cases to telescope, giving the package a sloppy appearance and crushing when piled, which ruins the exterior appearance and makes high piling impossible.

In the old days when a crew of men walked into a room, small numbers or small writing were readily discernible and the crew could pick out the proper merchandise readily. Today, however, mechanized equipment moves in quickly. The Army and Navy recognized this in the last World War and used the crescent, circle, triangular or square symbol to make different merchandise readily discernible. Smart packagers today can well add color designation. Whether your commodity be soap or drugs, I believe color engineering has its place in the practical side of packaging, as well as the esthetic side.

I would say the packaging industry has only touched the surface in the packaging of fresh fruits, vegetables and flowers. The use of pads containing preservatives, such as bisulphide cushions, has only been touched. Cheap pads containing a mild inhibitant can make possible the wider use, more effective distribution and less loss of countless products considered to be in the highly perishable class today. If a fruit or a vegetable does better in an artificial atmosphere, why not an artificial atmosphere in a plastic bag containing said product?

As a warehouseman, I recognize that the packaging industry has been greatly concerned with eye appeal, weight of containers as related to freight rates and consumer sizes for sales appeal. But let's not forget that the primary purpose of a container is to protect its contents from the point of production through distribution to the point of consumption, safely and economically, and that the warehouseman, the materials-handling engineer and the transportation industry share your concern over safe keeping and economical handling.

You Can Do Business With the Government—MERRILL F. WOODRUFF, *business specialist, Field Service, U. S. Dept. of Commerce, San Francisco, Calif.* Here in the West, Mr. Woodruff pointed out, our packaging producers and suppliers are gaining, every six months, a new market with enough people in it to create a city the size of San Diego. Every nine months out here we have a new Seattle. In the past three years we have added a whole new market the size of Los Angeles. And we are still growing. By the time you get back to your factories and offices tomorrow, you will have 5,000 more people in this Western market. This is the market you must nourish, protect and cherish because all of these people buy packaging in one form or another.

We are a young, growing market just chock full of expanding opportunities. In the last 50 years the population of the U. S. as a whole doubled in size. Our population in the 11 Western States increased fivefold.

The second most important thing in measuring our market is the amount of money it has to spend. Westerners have more money than anybody. In 1948, if all of the income of everyone in this country had been divided equally, each person would have had $1,410 to spend. On this same basis, every single individual in our 11 Western states had $1,523 or $113 more per person than the national average. We have always, here in the West, been a high-income area. Income and population are prime marketing tools.

Your U. S. Dept. of Commerce regularly publishes these market data for your use. Business can find no better yardstick for its production planning, for estimating sales quotas, establishing sales territories and for budgeting its operations. Here in our Western market, there is this other big customer—your Government.

You can sell to this big customer sometimes even more easily than to the other Western customers I have just described. But to do so you must put into that job initiative, resourcefulness and ingenuity equal to that you devote to selling in this private market of yours.

In selling to the Government, you have two responsibilties which—although they appear opposite to each other—are really compatible. As individual manufacturers and suppliers you work to create a good product or to provide a superior service, at a profit. As citizens and taxpayers you have the equally important stake of insuring that the Government gets real value for your money that it is spending. Those who buy for the Government recognize this too.

The first step is to find out what the Government wants to buy. The Department of Commerce, in cooperation with the Armed Forces and some civilian departments, prepares daily a synopsis of the buying intentions announced within the past 24 hrs. by these Federal agencies. Copies of these lists are available at every field office of the Department of Commerce and at over 1,500 other locations throughout the U.S., such as Chambers of Commerce, trade associations or other organizations.

On this consolidated synopsis you will find listed the item, the material or service needed, the amount or volume required, the date bids must be submitted and the proper identification or number of the bid invitation. These synopses list the items required by the principal unified procurement officers of some 55 military agencies and 14 civilian Federal agencies. From these lists you determine items or articles you wish to provide, you obtain the proper bid invitations as described and you are then standing outside the proper Federal purchasing agent's office, ready to make your presentation just as your salesmen, in private business, call on their trade in the normal pursuit of orders.

The listings on these daily bid synopses, while covering the larger procurement contemplated, by no means exhaust all of your possibilities in striving for Government orders.

Specifications and standards furnish the prospective bidder with the information needed properly to supply the wanted items in accordance with the needs and requirements of the Government.

Every invitation to bid includes complete reference to packaging and packing and marking of the items. And here is

where you come in. Almost everything purchased by the Federal Government is packaged. Here is a wonderful market for suppliers of containers and packages of all kinds.

If you want to canvass thoroughly your potential Federal market, and bite your share out of it, get acquainted with the specifications and standards on all phases of packaging required. Then sell your materials direct or furnish them to those suppliers who have successfully bid on Federal business and will need your products to make proper delivery.

THURSDAY MORNING

Chairman, W. B. VAN ARSDEL, *assistant director, Western Regional Research Laboratories, U. S. Dept. of Agriculture, Albany, Calif.*

Developing Sales Appeal With Protective Packages—FRED LEVY, *president, Blum's Confectionery, San Francisco, Calif.* Mr. Levy, who spoke extemporaneously, traced the development of his world-famous boxed-chocolates business from a corner candy store in 1934 to the largest business of its kind in this country today—producing and selling over a million pounds of fine candies annually—and gave credit to packaging as being the one factor more important than any other in his success.

Blum's has capitalized on ultra-cleverness in packaging—daring to do the different and unexpected thing. Yet, Mr. Levy warned his audience that in his opinion cleverness of the package is not as important as the matter of conveying an impression of high quality.

Blum's packaging innovations really date from Valentine's Day, 1935, when they produced special gift boxes which were traditional only in adherence to the heart shape. The company eschewed the usual red color and the usual satin box coverings, and produced charming packages in every color *except* red and using such materials as calico and burlap. The success of his venture convinced Mr. Levy that he was on the right track.

Easter candy gift buying had been largely a matter of children's sales—50- or 75-cent items. How could adult gifts and larger dollar volume be developed? Blum's answer was the now-famous "Hattie Blum" Easter-bonnet box, a hat box decorated with a flossy miniature hat and containing only about 1 lb. of candy. It sold for $5.75. The first year the company's Easter sales were up 50%. The second year sales were three times the previous year. The package has been an Easter institution ever since and has been responsible for imitative packages in other fields, making the hat box an Easter symbol in place of the stereotyped rabbits, eggs, etc.

Father's Day sales were created by Blum's with one of the most unusual packages ever produced in the candy field—a masculine-looking box with a Gay '90s motif, called "It's a Natural," containing, inside, two cubes representing dice, filled with candies known to be popular with men.

This year for Father's Day Blum's created a new one known as "The Shirt Off My Back"—an ordinary chipboard laundry box on the outside, with a simulated laundry ticket attached marked "give the bill to Dad." Inside was another box made up to look like a folded, red-and-white-striped shirt, complete with celluloid collar and real buttons.

Mr. Levy pointed out that Blum's nation-wide fame was largely built by such novel packaging ideas. But for steady and profitable operation it was necessary to have every-day buying. For this purpose a utilitarian and highly protective package was required. After some discussion the company turned to the metal can—but insisted that it have a few special features. It must be a key-opening can, subject to vacuum sealing, but it must have a true resealing lid and, on opening, it must present no sharp, cutting edges anywhere. It must look as little as possible like a commercial can package and for this reason pink was chosen as the background color for fine lithographed decoration. Today Blum's is turning out 5,000 lbs. of candy every day in these packages. The tins are considered so attractive that they have, suprisingly, become a favorite gift package in themselves.

Packaging a Seasonal Product—GRAHAME B. RIDLEY, *engineer, California Walnut Growers Assn., Los Angeles, Calif.* Walnuts are typical of a highly seasonal product, Mr. Ridley explained, because, in the first place, the crop matures in the fall and, secondly, the major market is during the holidays from Hallowe'en to New Year's. This means that the packaging plant must receive, package and ship most of the crop—in other words, do most of the year's business—in the space of some six weeks between early October and Thanksgiving, which is pretty nearly the deadline for Eastern shipment.

Walnuts are also typical of a large-volume product. During the season, some 1,750 box cars are loaded at 25 country packing houses and unloaded at the main warehouse and during the same period the warehouse loads 1,250 cars for Eastern shipment. Last season over 69 million pounds of walnuts were packed, more than half in cellophane bags holding 1 lb. each.

After processing in a local cooperative packing house, the nuts are shipped to the central warehouse in Los Angeles in burlap service bags. About half a million bags are required for this service and, as they must be fumigated, repaired and stored between seasons, they present a major inventory problem.

The walnuts from the local packing houses arrive in Los Angeles by box car and truck with each lot identified and again each lot is sampled and crack tested. The bags are unloaded directly onto pallets holding 25 bags each and these pallets are stacked two high in the warehouse by fork truck.

The warehouse also houses the bag department, where burlap bags are fumigated and repaired, and the very large packaging operation where in-shell walnuts are packed in burlap bags.

Until recently, in-shell walnuts were generally packed in 100-lb. burlap bags and this type of package still accounts for nearly half the pack, although the cellophane package has now caught up with it. An increasing proportion of the crop is also being packed in the smaller 5- to 50-lb. burlap bag sizes.

Pallet loads of nuts of the selected lots are brought to a row of hoppers into which they are dumped by hand. Each hopper feeds a draper belt consisting of a series of connected bars. Each has nine pockets and each pocket holds a nut. This continuous stream of separated nuts, nine wide, is carried up and under a revolving cylinder on which are mounted rubber printing dies which imprint the Diamond trademark on each nut. The printing dies are timed to match the belt pockets and, due to a combination of extreme flexibility in the mounting of the dies and a slight rolling action of the nut in its pocket, a remarkably clear impression is obtained in spite of the irregularity of the surface of the nut. Ink is fed to the dies by rollers and the whole operation is similar to a timed printing press, except that rubber dies are used instead of metal type.

The trend toward smaller packages has been referred to in discussing burlap-bag packaging, but the really outstanding illustration of this tendency is in the tremendous acceptance by the customer of the 1-lb. cellophane package. The value of the convenient-sized, visible, self-service package has now been demonstrated conclusively.

The package used in this operation is a duplex cellophane bag of 300 moisture-resistant transparent cellophane. It is a gusset-type bag, $4^1/_2$ by $2^1/_4$ in. and from 10 to $10^3/_4$ in. long, printed in two colors. At first all bags were bought from fabricators and were of the glue-sealed seam, lip-cut type. More recently, four bag machines have been installed, and now practically all the bags are made as part of the operation. These bags all have heat-sealed seams and are square cut.

Consideration of a number of factors led to the decision to

undertake bag manufacturing on a large scale and the same investigation might well lead to exactly opposite conclusions in some other type of packaging project. In this particular project it is necessary to have at least 35 million bags on hand on October first. Assembling this quantity is no last-minute job. Spreading it out all through the year permits a steady operation at a uniform rate. The fact that the bags are all of the same size, except for length, makes an ideal production set-up. Another helpful factor is adjacent storage, which eliminates some cartage and packing expenses. These are all conditions which favor this particular operation, but on the other hand attention should be called to increased space requirements and inventory, interest and insurance charges. Although in this instance it pays to make the bags, it by no means follows that such will be the case in most other operations.

While on the subject of cellophane bags, some mention should be made of the storage requirements. If the bags are packed tight and kept in a warm place, horrible things can happen to them. Instances have occurred where it took more operators to break the bags apart and condition them than it did to fill them. In this operation the bags are carried from the bag-making machines by cooling belts to the packing stations. They are packed, mouth down, in square, open-top, corrugated containers, each holding 500 bags separated by a cross partition into four lots of 125 each. No tops are put on these containers. They are stacked on pallets, each tier separated from the one above by a sheet of chipboard. This arrangement permits some air transfer and allows the cellophane moisture content to reach equilibrium with the air.

These open-top containers are later used by the operators at the filling stations. The bags are taken direct from the containers without any repacking or reconditioning.

The equipment of the cellophane-packaging plant is arranged in three identical groups, plus one quarter of a group which has been installed to pack irregular lots, such as private-label brands and special packs, without interfering with regular production. The operating schedule calls for a production rate of 1,000 bags a minute, which means a ton every two minutes or a carload every hour. Naturally, facilities must be provided for a large number of operators, especially since they work comparatively slowly at the outset because of the inexperience of many new workers hired each season.

It is worth while to note that, except for a month during the peak of the season, one unit would be ample to pack everything required and that over three times the normal equipment must be installed just to take care of this highly seasonal operation. It is obvious that the cost of this idle equipment must be kept to a minimum and that there is very little chance that elaborate automatic installations can be made to pay their way. There is, however, an opportunity for a moderate-sized unit to handle that portion of the operation that continues for more than the peak period. The economic considerations controlling the purchase of equipment may be plainly stated. In round numbers, cellophane-packaging operators earn $50 a week. During the peak the cost per operator is $200 for the four weeks. Allowing three years for amortization, which is liberal for specialty machines, this permits an expenditure of $600 for a machine to replace one operator. On the same basis, a packaging plant running for 50 weeks in the year could justify an expenditure of $7,500 for the replacement of one operator.

In packaging walnuts a small force continues after the peak of the season and there is some opportunity for working two shifts, so a moderate-sized unit could be used long enough to warrant two to three times the expenditure of the $600 mentioned. However, this would not apply to equipment large enough to handle the peak load.

To secure production under these adverse conditions, the actual packaging, which is done by women operators, is broken down into four simple jobs. These are: (1) filling bags, (2) weighing, (3) tucking gussets and feeding heat sealers, (4) packing in corrugated cases.

Certain general conclusions may be derived from this example of a highly seasonal packaging problem, Mr. Ridley pointed out.

Referring first to labor, it appears that to handle the peak load of a seasonal operation, the activities must be located where there is available an ample supply of suitable labor for which no responsibility need be assumed during the rest of the year. A first-class personnel organization with a clearly defined program of just, and even generous, labor relations is essential. Patient and understanding supervisors must be provided. Individual jobs should be reduced to the simplest practical form to reduce training time.

Inventory requirements vary widely from one type of project to another, but in all cases it is necessary to have assembled at the start of the season a stock of supplies which, together with those whose delivery can be counted on during the season, will be sufficient for the need. Where the rate of use is larger than the assured rate of delivery, quantities of certain supplies must be stockpiled, sometimes for a considerable period. This not only involves carrying charges, but requires that the material be given secure physical protection to prevent the loss of supplies that could not be replaced in time to be of any use.

Equipment may fall into one of three classifications: quality improvement, time saving and labor saving, and often more than one of these classes. By time in this sense is meant the time of total peak operation, rather than the time of a specific production operation.

Equipment primarily for quality improvement may be advisable for some reason unrelated to production—sales competition for instance—and may still be worth while, even if it increases the cost of the product. However, any equipment which reduces cost at the expense of quality should be viewed with suspicion.

Most equipment falls in the labor-saving classification, even if it is only a hand tool which permits a worker to do an effective job. The economic justification of its purchase depends largely on its anticipated useful life. A hand tool may wear out in one season and a specialty machine may become obsolescent in the same length of time, while an electric motor or a system of conveyors can be expected to last for many years. In general, the procurement of labor-saving equipment is indicated when its amortization cost is less than the cost of the labor it replaces.

Protective Packaging With Molten Thermoplastics—DR. WILLIAM RABAK, *Western Regional Research Laboratories, Bureau of Agriculture & Industrial Chemistry, Agricultural Research Administration, U. S. Dept. of Agriculture, Albany, Calif.* The practicality of protectively coating certain classes of products is well established, Dr. Rabak stated. The use of paraffin coatings in the protection of cheeses against deterioration has been practiced for many years. The confectionery and allied industries have long utilized edible-fat and chocolate-base coatings which serve the dual purpose of supplying protection and flavor. A dip coating of plain water ice has been utilized by the frozen-fish industry to retard desiccation during storage.

The advent of World War II stimulated thought along these lines. The Armed Forces adapted dip and spray coatings quite extensively. Machinery parts were protected against corrosion during shipment and storage by means of appropriate dip coatings. Field rations were protected against moisture adsorption in the steaming jungles by modified paraffin-base dips or other appropriate coatings.

Owing to variations in chemical and physical characteristics, thermoplastic materials vary in their protective effects. For example, refined paraffin is a very effective moisture barrier at ordinary temperatures, but at low temperatures it becomes brittle, cracks and loses its effectiveness under normal conditions of handling and shipping. However, another type of refined paraffins, i.e., the low-melting-point, soft microcrystalline paraffins, manifest excellent low-temperature flexibility and at the same time are equally effective as moisture barriers.

Their flexibility is improved with plasticizing agents, such as certain of the polyisobutylenes, crepe rubber and other compounds, resulting in coatings which are reasonably flexible and tough at low temperatures. These modified soft microcrystalline paraffins have been found to possess other unusual low-temperature adhesion and expansion characteristics which make them suitable for the dip coating of frozen commodities *per se*, such as frozen poultry or meat, or of the packages containing frozen foods. As the result, dip coatings of this type have been in commercial use since 1946 by a large segment of the frozen-food locker-plant industry.

Since continuity of the surface film is more important than thickness of coating, it has been found advantageous to strive for thin coverings. Coating thickness may be regulated by, first, the temperature of the molten thermoplastic; second, the timing of the "dwell" of the dip; third, by repetitive immersions. A dipping temperature maintained at plus or minus 15 deg. F. above the melting point of the thermoplastic usually results in the deposition of a suitably uniformly thin film after immersion for one second. Should bare spots remain, a second dip may be necessary. Coatings over 2 mm. thick (0.0078 in.) are undesirable because of decreased flexibility and unjustified increase of the cost factor. In the absence of "bare" spots, coatings 0.5 mm. thick were found to be effective in water-vapor and gas resistance.

Coatings are easily removed from the dip-coated items by peeling or "stripping." In the case of frozen commodities slight thawing develops a film of water between the coating and the frozen material which serves as a lubricant, enabling the easy removal of the covering in cast formation.

Mechanization is an important factor which must be given careful consideration if the package is to be utilized by industry. During the war, the Armed Forces used a type of dipping mechanism which involved the passage of the containers or commodities through a molten bath of the thermoplastic on a chain. A more recent proposal has been the use of a type of equipment used in the confectionery and allied industries, which is known as an "enrober," so named because the commodity to be coated is "enrobed" by a molten sheet of the coating applied through a slot from above a moving belt. With the enrober, thickness and evenness of the coating may be regulated by blasts of hot air applied from appropriate angles and hardening may be expedited by passage through a refrigerated cooling tunnel.

While this presentation has been more or less confined to the hydrocarbon type of thermoplastic, Dr. Rabak concluded, it should be emphasized that this is only one of many types which are amenable to the dip-coating procedure. Any thermoplastic compound having protective chemical and physical characteristics which meet the requirements of any specific product may be utilized. Well-directed research on this subject will reveal the qualifications essential to the type of protection required by a given commodity.

THURSDAY AFTERNOON

Materials Handling and the Divisible Case—E. N. BURNETT, *chief engineer, Western Division, Gerber Products* Co., *Oakland, Calif.* The demand for smaller cases of packaged units, Mr. Burnett explained, has been created by the following:

(1) Retail shelf space is limited. This makes it necessary for the retail merchant to break the larger cases, place part of the merchandise on the shelf and store the broken case in the back room. Back-room storage in a broken case is a headache to the retail merchant and the manufacturer because it tends to create unsightly and, often, unsalable merchandise.

(2) Limited shelf space is also one of the main reasons why the retail merchant will stock only the faster-moving items of a given line, thus making it extremely difficult for a saleman to sell a complete line of merchandise.

(3) The present trend is toward the reduction of retail inventories and/or the reduction or complete elimination of the retail storeroom. The optimum condition for the retail outlet is shelf storage or display of a complete case and more frequent deliveries of smaller cases of merchandise.

(4) Also, the manufacturers, wholesalers and retailers recognize that a convenient take-home case promotes a greater volume of sales by increasing the number of units per customer. Four cans or bottles of beer, for example, in a paper bag have less sales appeal than six cans or bottles in a convenient take-home container. A customer may have wanted only four cans, but he buys six because of the convenient package and that extra two cans in the customer's possession has more chance of being consumed than had they been left on the store shelf.

Prior to the war, we packed Gerber's Baby Foods four 1-doz. chipboard cartons to a shipper. The shortage of materials during the war forced us to a loose 48-can case pack. This was agreeable to us because it reduced packaging and material handling costs, and effective sales promotion was not a problem. At the close of the war when materials were again available, the demand for small units was felt. Our answer was two 2-doz. cartons packed in a single shipper. This new pack added one operator per line; increased the cost of the container by approximately $40 per thousand; increased the amount of equipment required to pack the container, as it was necessary to pack, glue, seal and print both inner and outer containers; increased the amount of warehouse space required for storage of knocked-down containers; and increased the weight of the case by approximately 12 oz., thus increasing freight cost.

Even in the face of these increased costs, the move was deemed advisable by our sales department because it was felt that they could get better distribution to the smaller retail outlets by selling where necessary in 24-can units instead of 48. This change was made early in 1948 and was used successfully until approximately three months ago. But this package was not the complete answer.

Late in 1949 we became interested in the divisible-case idea and the interlocking case resulted from this work. The component parts of a 48-can unit are so constructed that the flap extensions of one unit fit into the flap recess of the opposite case. The material for these flap extensions is taken from the inner flap so a minimum of board is used in manufacturing the case. This cut-away portion of the inner flap is used to good advantage in gluing and sealing the case, as will be pointed out later. The blank is die cut and tolerances must be more closely adhered to than in the manufacture of conventional cases. In assembling the case, glue is applied continuously to all flaps and flap extensions. To facilitate opening, a spot of ink is applied by the case manufacturer on the under side of the top flap at the center of each component part. Glue does not adhere to this spot and when depressed, gives a place for inserting a tool or finger.

The idea of interlocking the flaps of two individual 24-can units worked successfully in an experimental way on our existing equipment. By interlocking the flaps, we had a case that, when divided into its two component parts, answered the problems as previously outlined. It gave the retail outlet a smaller unit, allowing them to cut and shelve 24 cans and store 24 cans in a tight case. It answered wholesalers' problems in that when cases were divided, the component parts were as strong and as shippable as the original case. It reduced damage to stored material, etc. All these factors tend to promote sales.

In the baby-food industry, the take-home case is not feasible because of the variety of items the customer purchases. However, the interlocking case is adaptable to the take-home idea in that two or more units can be interlocked, using the same equipment that we now use, with very slight revisions.

The problem here is to design the package so that when two or more units are interlocked, the resulting unit is of a suitable shape for good handling, palletizing and warehousing, and still when divided will give the desired take-home unit. A three-by-four pack of 12 cans or bottles lends itself very well to two $^1/_2$-doz. units. A four-by-six pack lends itself to two

1-doz. units. There is also the possibility of interlocking four component parts so that the retail outlet could divide the case into units of 1/3 doz. or any combination thereof. The customer could purchase 6, 12, 18 or 24 in a take-home container.

By taking a look at the packaging line, we can see the ease with which the interlocking case is handled. The operator at the packer picks up and fills each 24-can unit and alternates them when they are applied to the packer magazine so that the 24-can units going into the line will be in correct orientation. The 24-can units are conveyed by means of a booster belt to a tapered roller, the timing section of which is so constructed that it times two 24-can units into a single gluer pocket. This section consists of alternating idler and driven rollers so arranged to give the desired gap between units. The stops are operated by solenoids controlled by a system of four limit switches. Two normally open switches are actuated by the component parts of the case and one normally open switch actuated by a cam on the gluer shaft. This system insures that the units will be timed correctly into the gluer. The fourth normally closed limit switch is mounted so that it is actuated by the bottom flap extension if the packer operator happens to reverse a case. This safety switch prevents individual units from going into the gluer incorrectly oriented. From this point on, the two individual units are handled as a single case.

By altering the flap opening and folding devices on the gluer, the flaps are opened, glued and closed in much the same manner as the conventional case. As the two component parts pass through the gluer, the top flaps are spread in the conventional manner. The plow closes the leading inner flap, the arm closes the second flap, the plow closes the third flap and the second arm closes the last inner flap. The only changes necessary to handle cases of more than two component parts are the additions of limit switches on the timing conveyor, additional flap-closing arms and additional length of the tapered roller timing section. After the case passes through the glue application, flaps are closed in the conventional manner.

The big advantages in the handling of this case are that there are no separate parts necessary to tie the case together; the blank is die cut and the flap extensions are an integral part of the case; there are no right- and left-hand cases; all component parts of the cases are identical; and with only slight revisions to the equipment it is possible to handle the case on existing machines.

Recently there have been several other applications of the idea of a divisible container. We feel that the divisible container will fill the need of retailers, wholesalers and manufacturers by answering the problem of limited shelf space, enabling the retailer to stock all he desires of a given line; answer the problem of back-room storage; and, if correctly applied, will give the manufacturer the answer to cheaper handling costs of take-home units and promote sales.

Power and Gravity in Multiple Floor Operation—ARNOLD H. FOX, *warehouse manager, F. W. Woolworth Co., San Francisco, Calif.* Today when we consider a new and modern warehouse plant, Mr. Fox said, we are inclined to think of a one-story building spread out over several acres—one great area free from any obstruction, with power trucks and lateral conveyors running in all directions.

It is a nice picture, a very impressive one and certainly a modern one, but there are certain disadvantages compared with a five- or six-story building. You can't use gravity in a one-floor building.

Many well-constructed buildings of 20 or 30 years ago are in excellent condition today. Most of them are five or six stories, but they are not obsolete for modern warehouse operation. In fact, a careful study may show that the right combination of power and gravity will give close to maximum efficiency and at minimum cost.

Let us take as an example a six-story brick and concrete building with spur tract facilities, situated in the wholesale district of San Francisco. It was erected about 30 years ago and is in good condition, with sprinkler system throughout. The ground floor is at car-door or truck-bed height—no basement. There are two large elevators and two large spiral chutes connecting the floors from the sixth to the first.

Our problem is the handling of merchandise and it is not a simple one. There is a large volume comprised of the general variety-goods line, 6,500 items covering just about everything from alarm clocks to zippers. There are albums and ant paste; buttons and brushes; candles and curtain rods; dog collars and diapers; and on through the alphabet to washboards, xylophones, yarn and zippers. If power and gravity can be combined for the efficient handling of this wide range of merchandise, there should be little difficulty with more standardized lines.

Let us look at the containers in which this merchandise is received. There are cartons and cases of all sizes and weights from 5 to 500 lbs. There are some bundles, barrels, packages or drums.

The first question will be, "Can this merchandise be palletized?" and the answer, based on actual experience, is a very definite "Yes!" Even live chickens and pigs can be handled in that manner and to very good advantage. There are some tricks, but there are few things which cannot be palletized.

The second question will naturally be, "Can these varied items be handled by gravity?" and again the answer with some reservation is "Yes." A properly designed spiral chute will handle a great variety of weights and sizes of cartons or bundles without damage and since most of our outbound shipments will be in cartons, the exceptions can be handled from the ground-floor level.

To get a clear picture, let us follow a shipment from the time it is received until it becomes a part of the customer's order. To minimize handling, all merchandise is palletized when it is received from inbound trucks or cars and pallet loads are marked with the number of cartons and the floor to which they will be sent. The loaded pallets are handled by fork-lift trucks and placed on flat-bed, four-wheeled trucks which hold two pallets each. This permits rolling loads on and off the elevators, thus avoiding delay, which is the usual objection to elevator service.

Actual traveling time of an elevator from first to sixth floor is little more than that to intermediate floors and, as top-floor space is less desirable for other use, full-case merchandise in this plant occupies the sixth floor. Pallet loads of full-case merchandise are therefore taken directly to the sixth floor, where fork-lift trucks convey them to designated piles where they are stored and from which orders are filled.

In filling this part of customers' orders, four-wheel flat trucks are again used, the cartons taken directly from the pallet piles. As loads are accumulated, they are brought to centrally located roller sections onto which they are checked and labeled or addressed. These roller sections connect with a chute on the sixth floor which delivers the cartons to a roller section on the first floor, from which they are again palletized and placed in numbered pallet racks to be combined with other portions of the order when ready for shipment. By this plan, lateral movement is minimized and the return trip from the stockpiles to the shipping room is made without expense or effort.

Here is what we have accomplished. There is complete palletization of inbound and outbound shipments with fork-lift trucks for moving and piling, with traveling distance reduced to a minimum.

For movement within the plant there are roller conveyors and chutes for cartons and overhead conveyors, chutes and rollers for tote boxes containing open-stock merchandise.

The chief objection to elevator operation has been overcome by keeping loads "on wheels" and the cost of power to get merchandise *up* is offset to some extent by using gravity to get it *down*.

True, the bird's-eye view of the building is no more impressive than before, but warehouse operators must be down-to-earth realists and we have in this 30-yr.-old building, Mr. Fox stated, a highly mechanized and very efficient operation.



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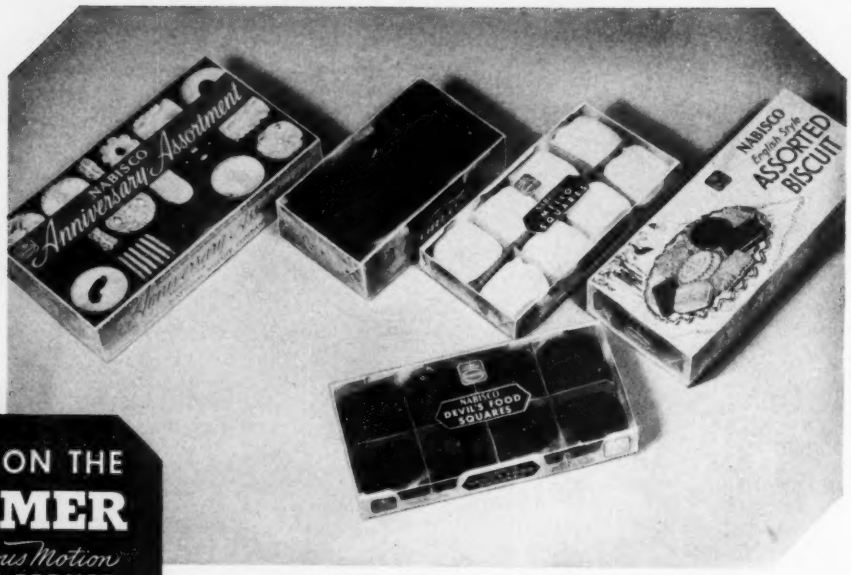
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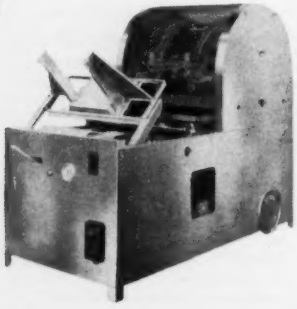
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Adhesives for laminations

THE MECHANICS OF ADHESION AND THE SPECIAL PROPERTIES REQUIRED IN FILM AND FOIL LAMINANTS.

By W. Sederlund*

The production of various foils and synthetic films on a growing commercial scale has brought to the packaging field new materials with many interesting, useful and decidedly practical properties. Modifications of existing films and new ones of different chemical composition continue to enter the field to meet changing requirements or stimulate new uses. Some of these materials have been used by themselves; others have been adhered in various combinations to produce laminated stocks into which additional desirable properties have been introduced by the laminating adhesive.

To the converting field, well versed in the art of paper-to-paper lamination, these films and foils have brought new headaches and problems. Some problems involve suitable mechanical means of handling the webs; these are in the province of the machine manufacturer. Other difficulties concern adhesives. This article will discuss how and why adhesives for films and foils differ from normal paper-to-paper adhesives and then mention general recommendations on laminants.

While most readers are probably familiar in a general way with many of the terms that will be used, to be sure that all have the same basis of understanding a few definitions are in order:

Film—Any flexible, organic, nonfibrous membrane not over 0.005 in. in thickness.

Foil—A smooth metal structure up to 0.005 in. in thickness, of a composition and temper that will permit easy forming or wrapping.

Emulsion—An oil-in-water-type emulsion adhesive consisting of minute particles of resin along with plasticizers and modifiers dispersed in a continuous aqueous phase.

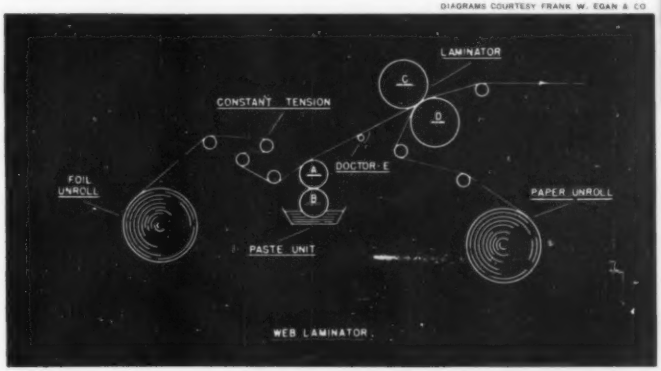
Lacquer—A solution in organic solvents of film-forming resins with modifying resins and plasticizers.

Hot melt—A solid or semi-solid combination of resins, waxes, plasticizers, etc., which fluidifies with heat but returns to the solid state when cooled. No drying is required to set these adhesives because they contain no solvent vehicle.

The main reason why different adhesives are necessary for film and foil laminations as compared to paper laminations relates directly to the structure and composition of the material being adhered. Paper has a porous structure due to the manufacturing method of depositing individual fibres or aggregates of fibres. Because of this relatively open structure of the sheet, paper adhesives may exercise their bonding action in two ways:

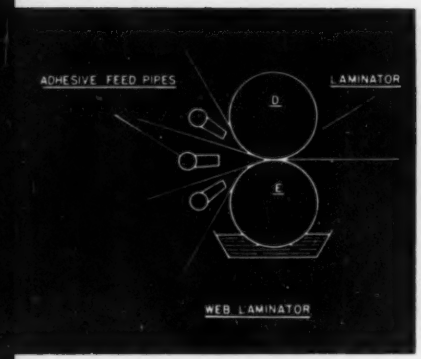
1. *Mechanical adhesion*—Interlock-

DIAGRAMS COURTESY FRANK W. EGAN & CO.

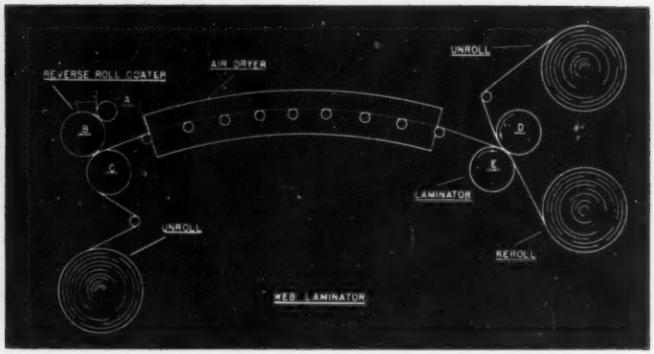


1. SCHEMATIC DIAGRAM of the web laminator used to combine aluminum foil with paper or paperboard. The adhesive is applied by "kiss"; applying film splits twice, first at the nip of rolls "A" and "B" and second as the web leaves the face of roll "A." The doctor roll "E," driven in the same direction as web at 1/10 the speed, reduces coarse ribs formed by larger breakaway angle of web leaving face of roll "A."

* Supervisor of Adhesives Technical Service, National Adhesives Division, National Starch Products, Inc., New York.



2. PIPELINES PUMP adhesives between the webs as they enter nip of combining rolls "D" and "E" in this multi-web set-up. For these types of laminators, the adhesives which are to be used must be fluid and quite low in viscosity.



3. REVERSE ROLL COATER on a two-web laminator similar to machine in Fig. 5. It applies adhesive to back of any web regardless of caliper or surface. Adhesive in fountain is metered between metering roll "A" and casting roll "B" and is cast on web as it passes around backing roll "C." All rolls revolve in same direction. Air dryer evaporates solvents and leaves adhesive in tacky state as it enters bonding nip of rolls "D" and "E."

ing or wedging of dried glue film between and around fibres.

2. *Specific adhesion*—Bonding of the adhesive to cellulose fibre through various chemical forces between molecules of adhesive and cellulose.

Metallic foils made by rolling methods and films made by extrusion or casting methods do not show this decided porous structure. Therefore, laminants for films and foils bond mainly through specific adhesion.

Moreover, paper is composed of cellulose fibre chemically related to starch (hence the large tonnage of starch and modified starches used as paper adhesives), whereas films (with the exception of plain, non-moistureproof cellophane) are made of materials usually referred to as synthetic resins or plastics.

Problems encountered

The failures and the difficulties encountered in these laminations are quite different. Paper-to-paper adhesives—if properly formulated so as not to be excessively hygroscopic at high humidities or lose film strength at low humidity and containing no active chemicals which may cause bleaching or discoloration effects—can be used with considerable assurance. If the bond is satisfactory after one or two days of proper drying, it usually will hold up indefinitely. There are no appreciable solvent effects from the adhesive on the paper fibre. Wet curl caused by swelling of paper fibre by water in the glue may be a source of annoyance while laminating, but at least this is a temporary problem that can be coped with at the factory.

Practically all paper adhesives produce bonds in which the film strength of the glue exceeds the tear strength of the paper; i.e., when the bond is evaluated, a paper tear results—and the actual force required depends upon the strength of the sheet.

This is not true of films. Most film bonding depends on maintaining the laminant in a semi-plastic state. Despite careful formulation, embrittlement at low temperature or yielding or plastic flow at high temperature is possible. Whether the adhesive used be a lacquer or an emulsion type, if the solvents or plasticizers are too active, bleeding of inks, distortion of sheeting or penetration which causes blocking may result. Also, since many of the resin bases used in these adhesives are chemically similar to the films themselves, there is possibility for migration of plasticizers from one to the other. As the adhesive is usually the more highly plasticized, the migration is generally from adhesive to the film, resulting in embrittlement of the bond. Sufficient migration to cause failure may require weeks or months; therefore, a lamination which looks excellent a few days after manufacture may be poor after long aging. Oven or incubator tests are commonly employed to accelerate such aging effects; and if oxidation is also a consideration, oxygen bomb tests may be used.

In contrast to paper, the films and foils that have no fibre structure do not, of course, display the same tear effect when the bond is evaluated. With the latter the failure is through the film or foil to adhesive interface ("zippering"), or through the adhesive. The bonding effect is much less convincing and the strength will depend upon the angle of separation.

Techniques of laminating

The techniques of laminating impervious films and foils differ in many respects from those used in laminating porous paper structures. The majority of paper adhesives have water as the vehicle or fluidifying agent. Since mechanical adhesion is involved to a considerable extent in paper bonding, after the adhesive has been applied to one web or sheet we try to maintain the glue film in a fairly wet condition until the two or more plys are brought together. This is to permit sufficient penetration into the interstices of the sheet to assure strong bonding action.

Occasionally a short drying or tempering period is used to allow the adhesive to "tack up"; but if the glue film is too dry or inactive when the plys are brought together, a poor, superficial bond results—especially on tougher stocks such as kraft, bond, glassine, parchment, etc. After the plys are combined, the lamination may be force dried or the moisture allowed to dissipate slowly from the stack or roll. If emulsions—consisting of resins and solvents emulsified in a continu-

ous water phase—are used for laminating films, the water and solvent must be driven off before the films are combined. Most films have low water-vapor transmission rates and if water were trapped between the films, the adhesive would stay wet indefinitely. Solvents trapped in the bond would produce undesirable solution or distortion effects on the film. If lacquers are used, the problem of residual solvent is still greater. Even polyethylene, which is not soluble in known solvents at room temperature, is markedly swelled or distorted by many organic solvents.

Therefore the removal of water and solvent is a "must." Usually the adhesive is applied to one web which then passes through a drying section (tunnel or drum) to drive off most of the water and solvent. While the adhesive coating is still in a tacky state due to the elevated temperature of the drying section, the two webs are pressed firmly together with nip rollers to form a bond.

When hot melts are used for this work, the adhesive is kept in a fluid state for application by heat alone. No solvent or water is present; hence, no drying section is required. However, as wetting is a requisite for adhesion, the adhesive coating must be in a tacky state when the webs are pressed together. This may be done either by combining the webs before the hot-melt coating has cooled after application, or by using heated nip rollers to reactivate the coating.

Choice of laminants

By far the greatest volume of adhesives used for ordinary paper-to-paper bonding consists of colloidal dispersions in water of hydrophilic (water-loving) film-formers such as starches, modified starches, animal glue, casein and natural gums. Resin emulsions may be used for paper where particularly fast set, water resistance or great flexibility is required. Lacquers are infrequently employed because the organic solvents have low surface tension and little or no swelling effect on paper fibre. The lacquers tend to penetrate, strike through the sheet and give good to poor adhesion depending upon the particular paper stock. Hot melts when used for ordinary paper laminations generally function as a water-vaporproof barrier and show no superiority for final adhesion characteristics. Film softness or plasticity is not essential for paper bonding.

The picture on film and foil adhesives is in marked contrast to the above. Vegetable, animal, etc., glues have no place except in some paper-to-foil laminations. Adhesives based on natural or synthetic resin are required. All film laminants require plasticity—whether that laminant be an emulsion, lacquer or hot melt. This plasticity may be inherent in the polymeric resin film-former due to its molecular configuration, chain length and number and strength of primary bonds and side bonds—or it may be introduced into a hard, brittle resin through proper plasticizers.

Aluminum, tin and lead foils are used in commercial laminations and aluminum foil represents by far the greatest volume of the three.

There are a variety of films that could be considered for laminating work. The number of film names is even greater, for each manufacturer has his own trade name for a particular composition. Some of these films, listed according to the general designation, are: cellophane, cellulose acetate, cellulose acetate butyrate, cellulose propionate, ethyl cellulose, polyethylene, polystyrene, polyvinyl alcohol, polyvinylidene chloride, rubber hydrochloride, rubber hydrochloride nitrile rubber, vinyl chloride copolymer and vinyl halide nitrile rubber.

For laminating aluminum foil to paper, vegetable adhesives or occasionally sodium silicate may be used when water resistance is not required. If the paper-foil lamination will be used for beer labels or other applications where a water-resistant bond is required, emulsion types are necessary. The emulsions may be based on plasticized synthetic resins or on synthetic or natural rubbers. Furthermore, if the lamination will be subjected to any high-temperature lacquering or finishing operations, the adhesive must not be too thermoplastic.

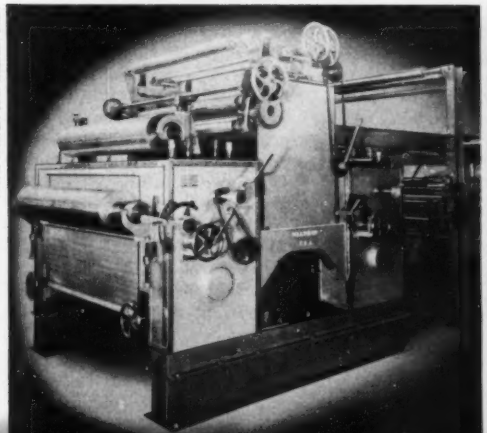
Since aluminum foil may fog or pit if the lamination is rewound while the adhesive is still wet, it is customary to pass the web through a tunnel dryer or over a heated drum to remove moisture before rewinding.

Foil backed with paper is normally used for its eye-catching attractiveness. If used for its impermeability characteristic, foil should be backed and laminated with materials that contribute to strength, flexibility and impermeability. Foil itself tends to be brittle, has low tear strength and may contain pinholes. When foil is bonded with hot melts or lacquers (which contribute water-vapor resistance) to

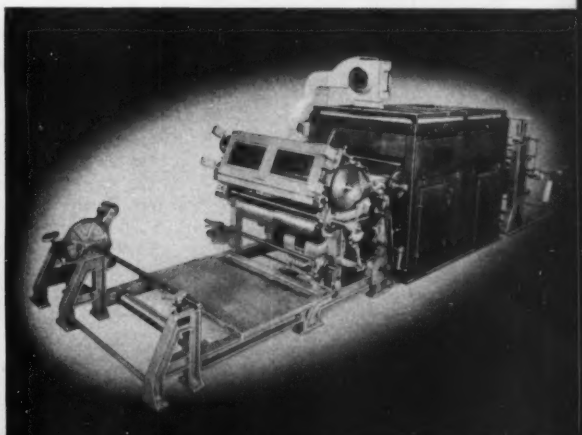
(*This article continued on page 203*)

4. HOT-MELT LAMINATOR for three webs of material. The machine is fully enclosed in an insulated housing.

5. REVERSE ROLL COATER, pre-dryer and laminator for two webs. Scheme is similar to that illustrated in Fig. 3.



PHOTOS COURTESY JOHN WALDRON CORP.



British testing techniques*

FOUR TYPICAL PACKAGING PROBLEMS SUBMITTED TO *PATRA'S* TESTING STATION

AND HOW THEY WERE SOLVED. By F. A. Paine,† B.Sc., A.R.I.C.

It is always interesting and instructive to observe the other fellow's everyday problems and his approach to their solution. It is with that thought in mind that this set of four testing case histories from the Package Testing Station of Britain's Printing, Packaging and Allied Trades Research Assn. (PATRA) is presented. Although they tend to look wistfully at America's wealth of materials and boldness in design, the British actually are far ahead of this country in their maintenance, through PATRA, of a complete packaging library and testing facilities for the cooperative use of all British industry.

Cushioning for whiskey

Twelve cases were sent to PATRA for testing. All the outer cases were exactly similar and consisted of nailed wooden cases 14¹/₈ by 12¹/₂ by 9¹/₂ in., approximately, each containing 12 bottles of whiskey each in a carton. The total weight of each box was approximately 45 lbs. The difference lay in the inner carton, of which there were four different kinds:

A. Chipboard cartons with single-faced corrugated liners.

B. Chipboard cartons with double-faced corrugated liners.

C. Leatherboard cartons with single-faced corrugated liners.

D. Leatherboard cartons with double-faced corrugated liners.

Each case was marked accordingly, A, B, C or D.

The firm asked the following questions:

1. Which of the four choices is the best pack?

2. Is any one of the choices too good and expensive for normal commercial purposes?

3 and 4. Is the wooden case the correct size for the cartons—and the carton the correct size for the bottle?

5. Suggestions for improvement in the pack?

It was decided to examine the cases by means of the drum test.

Two cases of each type were submitted to the drum test, exactly as received. The results are given in Table I.

As the table shows, the case usually broke before any bottles had broken. (See Fig. 1).

A third case of each kind was then bound with wire and tested in the drum. The results (given in Table II) showed that the use of wire banding considerably improved the strength of the case. It was then possible to compare the internal packings with one another, since the breakage of the bottles occurred before the case broke up.

As the result of the tests, the answers to the specific questions were:

1. The evidence from the tests carried out tends to indicate that there is not much difference between the four packs. The double-faced corrugated liners (Types B and D) may be slightly better than the single-faced liners (A and C), but whether the carton is made from chipboard or leatherboard is immaterial from a functional point of view.

2. The short answer is—No! But it seems that the use of leatherboard will not improve the strength over that supplied by chipboard.

3 and 4. The dimensions of both seem satisfactory.

5. The use of steel wire or strapping girthwise round the case would improve its strength immensely.

Behavior of paper bags

In this inquiry we were asked why there was a considerable difference of behavior between bags (to contain cereals) from two sources. One bag had behaved satisfactorily, but the other make, while of the same thickness and type, frequently burst in transit.

The problem was investigated by measuring the bursting strength (see Fig. 4) of the two types of paper combined with a determination of the fibre furnish in each instance (see Figs. 2 and 3). The results are given in Table III.

It was obvious from the bursting strength that Bag B was made from a much weaker paper. It is also well known that the properties of coniferous wood fibres are such that paper made from them is much stronger than that made from deciduous wood.

The main cause of the trouble, therefore, was the choice of the wrong type of paper for the manufacture of Bag B.

Breakage of jars

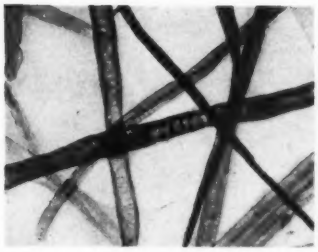
Investigation of the cause of breakage in a pack containing small jars of cosmetics began with a visit to the inquirer's works to examine the type of damage and breakage complained of. Considerable information was derived from this visit and specimen packs were sent to PATRA for testing. The pack consisted of a flat case of corrugated fibreboard containing six

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† Package Testing Officer, Printing, Packaging and Allied Trades Research Assn., Leatherhead, Surrey, England.

1. DRUM TESTS showed that nailed wooden cases of whiskey usually broke before any bottles had broken. Further tests showed wire banding considerably improved strength of case.







2 and 3. PINE FIBRE (left) was found to give much more satisfactory performance than chestnut fibres (right) when used as the furnish in paper for cereal bags. Choice of type of paper is important factor.

TABLE I

Type and No. of case	*No. of drops to cause breakage*	*Description of damage*
Type A. No. 1	20	Case broke up without damage to bottles.
No. 2	55	Case broke up without damage to bottles.
Type B. No. 1	61	1 bottle broken. Case badly damaged.
No. 2	41	Case broke up without damage to bottles.
Type C. No. 1	12	Case intact. 1 bottle broken.
No. 2	19	Case broke up without damage to bottles.
Type D. No. 1	50	Case broke up without damage to bottles.
No. 2	68	Case broke up without damage to bottles.

TABLE II

Type and no. of case	*No. of drops in drum to cause breakage*	*Description of damage*
A3	66	1 bottle broken. Case intact.
B3	18	1 bottle broken. Case intact.
C3	10	1 bottle broken. Case intact.
D3	54	1 bottle broken. Case intact.

TABLE III

Bag	*Performance*	*Bursting strength (lbs./in.)—mean of 10 bursts*	*Fibre furnish*
A	Satisfactory	38	Coniferous wood-pine fibre.
B	Unsatisfactory	17	Deciduous wood-chestnut type.



4. BEHAVIOR of paper bags for cereals from two sources was determined by measuring bursting strength of two different types of paper that were used.

trouble, so it was necessary to examine all six makes.

The boxes were dropped through the given sequence, starting at a height of 12 in. and raising by 3 in. on completion of each sequence until breakage occurred. The following results become evident.

1. There was no significant difference between boxes made by different makers.

2. The vast majority of breakage occurred when the box fell in Position 4, i.e., on its smaller side face.

3. Breakage occurred through breakdown of the internal partitions between jars, which crushed and allowed two jars to meet through the crushed board.

4. The average breakage height was about 18 in.

(*This article continued on page 206*)

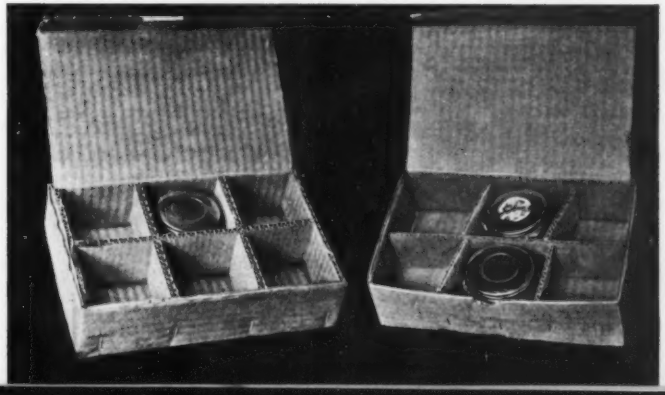
jars separated by half-slotted interlocking partitions.

It was decided to test the packs by means of the drop test and the problem was such that only four positions of drop were considered operative. The sequence was:

Drop on (1) base
(2) top
(3) larger side face
(4) smaller side face.

Supplies of this pack were obtained from six box makers and there was no information as to whether any particular make was causing the

5. ORIGINAL (right) and modified (left) boxes for jars of cosmetic product. Improved partitions greatly reduced breakage in drop tests.



Questions & Answers

This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

Labeling plastic containers

QUESTION: We are interested in labeling a plastic container on a high-speed production line and to adhere the label so that it will meet normal usage and yet be easily peelable. The label adhesion should be good for at least six months at room temperatures and yet be removable without too much soaking, so that the container can be re-used without marring or clouding the surface of the container. Will you be good enough to advise us on this matter?

ANSWER: A very simple answer to your problem would be to use a completely wrapped-around label which would be adhered to itself on the overlap. This type of label could be run on standard equipment using conventional paper adhesives. The label could be easily removed by tearing and there would be no difficulty or problems of removing the adhesive from the package. However, if for merchandising or other reasons you cannot use a wrap-around label, then it will be necessary for you to obtain a special adhesive to meet your requirements. It would appear that the best adhesive for applying a paper label to plastic would be an emulsion type with water as the continuous phase and a rubber or synthetic resin in the dispersion phase. There are many possible combinations of adhesive that could be made on this basis and they should operate satisfactorily on standard labeling machines. The problem is to find a proper dispersed phase which would adhere well to the plastic and yet not provide undue difficulties in removal. This is a question of limiting the activity of the solvent or other active agent in the dispersed phase. There are many companies which make this type of adhesive and who would be capable of solving your problem if you were to submit to them sample packages and labels and describe the labeling machinery which you now have.

Spray container for chemical

QUESTION: We have developed a fireproofing compound for household uses and would like to package it in a container with some type of built-in spray device. We have considered aerosol-type containers, but our laboratory has informed us that our solvents make this impossible. We would like your suggestions on how we can package this chemical so as to present the customer a simple package with a spray applicating means.

ANSWER: The aerosol filled metal can has been successfully used as a spray package for household decorative lacquers. It might simplify your problem if your laboratory could reformulate your compound so that the solvent system will be compatible with the aerosol materials. If this cannot be done, you will have to devise some type of finger-operated sprayer in a metal can. Such units have many disadvantages: it will probably be necessary to have the customer insert the spray unit and there would be the problem of the sprayer gumming up from solvent evaporation.

A polyethylene bottle could be the basis for a simple spraying means, but the loss of solvent could be great enough in storage and handling to make it unsuitable and also it probably would not be successful in holding the aromatic solvent in your solution. However, a change in the solvent system or the use of an aqueous-base solution or dispersion might make it possible for you to use with success a polyethylene bottle fitted with a dispenser.

Mold inhibitors

QUESTION: We are interested in the subject of mold inhibition, with particular reference to the packaging of tobacco and similar products. It is our understanding that many chemicals have been tried in the last few years and that some of these operate in the vapor phase so that the products to be protected do not actually have to be in contact with the inhibitor.

We would like to have your help in locating additional information on this subject or information concerning the specific use of materials.

ANSWER: A great deal of work has been done to improve the mold-inhibiting properties of packaging materials, both in the prevention of mold on the surface of the materials as well as on the product which is packaged. Mold inhibition is easy to accomplish in packages for products which are not for human or animal consumption. However, it is very difficult to obtain effective moldproofing either of the contact or vapor-phase type for packaging materials to be in contact with all types of food or similar products.

As a general background for the work which has been reported in this field, the following articles which appeared in MODERN PACKAGING will be of interest: "Diphenyl in Citrus Wraps," Dec., 1944, p. 113; "Coatings on Kraft," Dec., 1947, p. 165; "Bacteriology of Food Package Materials," Nov., 1947, p. 145. The first two articles are particularly interesting because of the large number of appended references. These articles show how mold inhibition has been accomplished in specific instances and will therefore be able to serve as a guide and aid you in solving your particular problem.



Seal with

CEL-O-SEAL

Reg. U. S. Pat. Off.

to make your sales message register at point-of-sale

You can put your quality message, slogan, premium offer, insignia, brand name—or any other sales prompter—right up front where shoppers are sure to see it on attractive "Cel-O-Seal" bands. And you get this *extra* selling display on an area of your package that would otherwise be wasted space!

That's one of the reasons why Ellena Brothers, makers of Regina wines, chose "Cel-O-Seal" closures to feature the Good Housekeeping Seal of Approval on their Wine Vinegar package pictured here. "Cel-O-Seal" not only gives this quality message prominent display, but also fastens a 16-page recipe booklet securely to each bottle "Cel-O-Seal" assures complete closure and cleanliness in shipping, too . . . lets customers know at a glance that the product hasn't been tampered with.

Make your product a real stand-out on the shelf with a distinctive "Cel-O-Seal" band. You can choose from more than twenty colors and countless color combinations for crisp reproduction. We'll be glad to work with you in designing an outstanding "Cel-O-Seal" band for your product. "Cel-O-Seal" Division, E. I. du Pont de Nemours & Co. (Inc.), 2522-A Nemours Building, Wilmington 98, Delaware. "Cel-O-Seal" bands are also sold by Armstrong Cork Company, Lancaster, Pa., and I. F. Schnier Co., San Francisco, Cal.



DU PONT

REG. U. S. PAT. OFF.

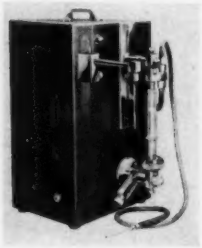
DU PONT "CEL-O-SEAL" BANDS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

Equipment and Materials

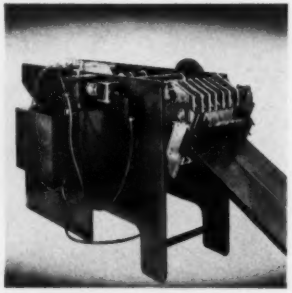
PORTABLE FILLING MACHINE FOR VIALS

called the Filamatic is designed to deliver accurately measured quantities of aqueous or light-oil liquids under sterile conditions. Manufactured by the National Instrument Co. (known formerly as S. Rosen & Associates), 5005 Queensbury Ave., Baltimore, Md., the Filamatic is said to operate at speeds ranging from 500 to 5,000 deliveries per hour. A thyratron type control gives stepless, variable speed at full torque. Operation is quiet, with no mechanical components to wear out and piston adjustment on the syringe is controlled by a micromatic knob capable of adjustments to 0.002 in. Accuracy for filling quantities ranging from 0.025 to 50 cc. is said to be better than plus or minus $^1/_8$ per cent. Change in delivery time is easily made by adjusting micrometer and retightening thumbnut.



NEW, COMPACT SHEETER

for sheeting any printed matter from rolls to sheets has been developed by Wolverine Paper Converting Machinery Corp. The "Cub" employs new electronic and automatic devices for high-speed production of accurately cut sheets, the company says. It is equipped with web and feed tension control, electronic eye control for accurate cut-off register and an automatic sheet delivery which permits the entire delivery to be placed at any angle. The Cub is built in two sizes: 15 by 15 in. and 30 by 30 in. and will cut any size up to the size of the sheeter itself. Speed of operation is said to be from 500 to 600 sheets per minute. The machine will cut a variety of materials including paper, plastic films, cellophane and foil. Additional information may be obtained from the company, 19,210 Stansbury Ave., Detroit 35, Mich.



NEW CHOCOLATE FOIL-WRAPPING MACHINE

said to handle any size from $^1/_8$ to 2 in. and any shape or type of chocolate using a single stainless-steel feeding plate has been introduced by Peerless Confectionery Equipment Co., 158 Greene St., New York 12. This machine is equipped with a variable-speed drive, permitting production speeds ranging from 60 to 120 pieces per minute, it is said. Mechanical cut-out feature saves foil when no candy is on the feeding plate. Every part of the cam-operated machine is easily accessible for inspection, cleaning and adjustment. Wrapper is 30 in. wide by 42 in. long by 42 in. high and is operated by a $^1/_3$ h.p., 220-volt, three-phase variable-speed motor.

PORTABLE SCREW CAPPER

manufactured by Scientific Filter Co., 57 Rose St., New York 7, has been redesigned and is now lighter weight and has a more powerful universal-current motor available in all standard voltages and cycles.

The new, $4^1/_2$-lb. "Whirlwind" can be suspended from the ceiling and, because of the extra-long suspension spring, covers a wide area of operation. The capper is said to tighten metal or plastic caps at a speed of about 30 to 50 caps per minute. The caps are placed by hand on the containers and the Whirlwind then turns them to predetermined degree of tightness, insuring a uniform seal without dependence on the individual operator. Flexibility of the suspension spring makes the capper easy to use in tightly packed vials and odd-shaped containers.



NEW GIFT-WRAPPING MATERIALS

which combine decorative and protective properties have been announced by Chippewa Paper Products Co., Inc., Chicago. The new gift wrap features single or multicolor and metallic patterns printed on the surface of flexible corrugated wrapping materials. The gift wrap is supplied to retailers already cut and may be sold over the counter to individuals. It also comes in rolls and sleeves in a wide range of weights and sizes.

A scoring device is now provided for the Chippacutter, a light-weight cutting machine for a wide range of industrial packaging materials. This attachment is said to be of use in preparing corrugated or other packaging materials for folding.

COLLATING AND WRAPPING MACHINES

designed to speed up the packaging of greeting cards, envelopes or similar paper products have been developed by John G. Herrmann Co., Floral Park, N. Y. The collating machine (illustrated) is said to be capable of gathering over 6,000 groups of greeting cards and delivering them to another unit, such as a cellophane-wrapping machine, in jogged, neatly stacked piles. It is manufactured as a six-pocket basic unit and



can be expanded with additional pockets. The X-cello wrapper is designed to speed up the hand wrapping of cellophane-wrapped packages and is particularly suited for short runs. It is light weight, portable and is said to be low in cost.

ADHESIVE FOR FABRICATING BAGS

of multiwall and specialty construction made from polyethylene-coated kraft stocks, is announced by National Adhesives, Div. of National Starch Products, Inc. The adhesive, called

It's Not Only the Heat . . . It's the Humidity



Humidity isn't much fun when you are the subject. But Vaposet inks love moisture, and they set instantly on application of steam or vaporized water. They are the nearest to odorless inks yet achieved. Jobs can be put through waxing machines within two hours after printing—the real answer to printing, waxing and rewinding. Vaposet inks print clean, have superior sealing qualities, work better on sealing machines.



IPI, Anilox, Vaporin and Vaposet are trade-marks of Interchemical Corporation

This Kind of Hot Air Needs No Apologies



There is only one kind of hot air we will permit in this paper. That's the kind that is used to dry Vaporin inks instantly on bags and labels. These inks are ideally suited to high-speed, quality printing on this type of production. By the use of radiant heat or turbulent heat ovens, Vaporin inks dry instantaneously, retain their body throughout the run, offer fast, clean, fine quality printing. IPI pioneered in heat-set inks.

IPI • DIVISION OF INTERCHEMICAL CORPORATION • 67 WEST 44th ST., NEW YORK 18 • ADDRESS INQUIRIES DEPT. A

HOT DOG RED, MUSTARD YELLOW NO PROBLEM FOR IPI COLOR MATCHERS

Recently an IPI customer ordered 5 lbs. of *Hot Dog Red*—then complained that it didn't match the real thing. We asked "Did you cook 'em? Franks can't be hot dogs till they're boiled or grilled." Sure enough our *Hot Dog Red* matched the cooked franks to a T.



Then the customer called back for 2 lbs. of *Mustard Yellow*. And he added, "I don't care whether it's boiled, fried or stewed mustard."

Moral: Always order color by IPI Color Guide number or A.S.A. specification.

COLOR PICKER POPULAR WITH PACKAGING PEOPLE

Packaging people everywhere like IPI's new Color Picker for Packages. Handy cards show how colors will look on finished package. Instructions coordinate colors with each other and with IPI's Color Guide for Boxboard. Both free from IPI.



IPI HAS 'EM—MATCHES FOR ALL COLORS SHOWN IN NEW G.C.M.I. COLOR CHARTS

Package Printers Can Order Inks by Number from Nearest IPI Branch

Now package printers can get IPI inks to match all the new G.C.M.I. package colors. And they can get them from any one of IPI's 31 Branches and Service Stations throughout the country. All of these colors may be ordered by number as shown in the color charts issued by the Glass Container Manufacturers Institute, Inc.

Colors in the new charts are those found most popular for printing corrugated boxes for glass containers. They are also said to be time-tested for legibility against the characteristic color of corrugated board. The effect of backgrounds on printed colors is of great importance in package printing.

Charts Developed for Better Color Control

The G.C.M.I. developed these charts to give the industry better standards for color control in production. The use of these and other visual standards helps to prevent too much "color drift" from original colors due to stock variations. IPI also recommends that package



printers use "tolerance curves" (determined with the Recording Spectrophotometer) for maintaining color standards in package printing.

G.C.M.I. Covers Wide Range of Color Needs

The 36 G.C.M.I. colors cover a range wide enough for most requirements. The charts were printed with oil inks, but IPI can also supply commercial matches for all colors in moisture-set and aniline or Anilox inks if customers desire. Next time you have G.C.M.I. colors specified, just send the numbers (right out of the chart) with stock samples and other data to your nearest IPI Branch or Service Station.

AT LAST! A COMPLETE SURVEY OF ANILINE PRINTING

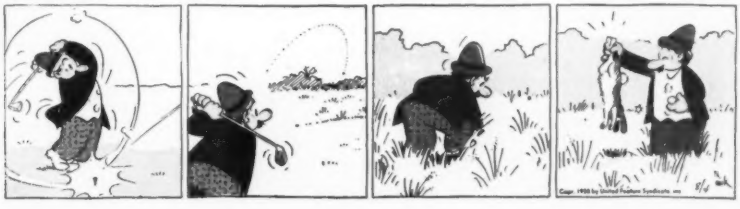
Now you can have that popular report on aniline printing. Printers tell us it's the most complete survey of the aniline process they've seen.

Aniline printing is the fastest growing method in the packaging field. New techniques and equipment are appearing constantly. If you use aniline printing, this report brings you up to date on the latest developments. And if you're going into aniline work, there's no better primer.

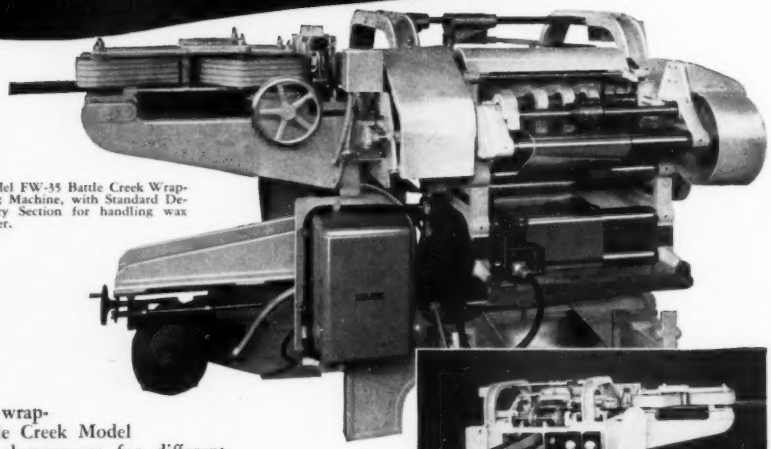
Your IPI salesman has a copy of "Aniline Printing" for you or write to IPI, New York.



FERD'NAND Bunny Business **By Mik**



wide adaptability high speed wrapping



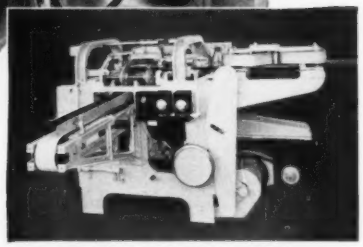
Model FW-35 Battle Creek Wrapping Machine, with Standard Delivery Section for handling wax paper.

LOW INITIAL COST

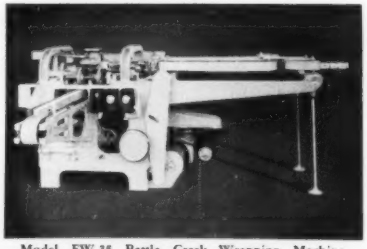
You get unusual savings in wrapping costs from the Battle Creek Model FW-35 through quicker changeovers for different package sizes and high speed operation. Consider how your wrapping costs will be reduced by a machine which will wrap more than 100 packages per minute, especially since no operator is required, for the machine is automatic in operation. The Model FW-35 has electronic controls for registering printed designs accurately on your package. The machine will handle a variety of packages, boats, trays or cartons. The change of roll paper has been simplified so that valuable man hours can be saved every day of its use.

CAN BE FED FROM A PREVIOUS CONVEYOR—A variable stream of cartons can be fed from a previous packing conveyor without the actual need of an operator for feeding purposes, other than the occasional services of an attendant to supervise the operation of the packing line, and replace the roll of paper when needed. Automatic timing and paper feed controls will regulate the flow of packages through the wrapping machine. This means further labor savings through the use of the Model FW-35.

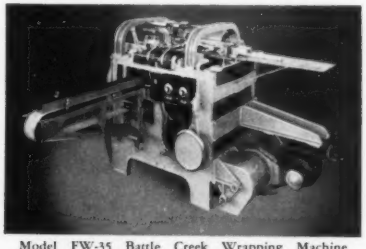
HIGHER SPEED—Compare this speed of more than 100 packages per minute with the slower and older hand-fed models operating only at 30 to 60 packages per minute. Consider the automatic features and rugged construction and you will agree that the price of the Model FW-35 is surprisingly low. You will find, as many others have found, that the savings in labor plus the sales stimulating packages produced by the machine will repay your investment in a surprisingly short time.



Model FW-35 Battle Creek Wrapping Machine, from intake side of machine, showing belt intake, controls and discharge section of standard machine.



Model FW-35 Battle Creek Wrapping Machine, with Extended Delivery and Cooling Section, for use with waxed paper at high speed (not standard equipment, but can be equipped when requested).



Model FW-35 Battle Creek Wrapping Machine showing discharge section (without belts) as supplied for use with self-sealing cellophane.

GIVES THE GREEN LIGHT TO PACKAGING PRODUCTION

Continuous Flow PACKAGING

BATTLE CREEK BREAD WRAPPING MACHINE COMPANY
BATTLE CREEK, MICHIGAN

Equipment and Materials
Continued

Poly-Lok, combines high solids with low viscosity and is said to machine cleanly, tack immediately and exhibit no air blistering with age. The company reports that Poly-Lok seams can withstand temperatures ranging from minus 20 to 250 deg. F. Technical data and samples are available from National's office at 270 Madison Ave., New York 16.

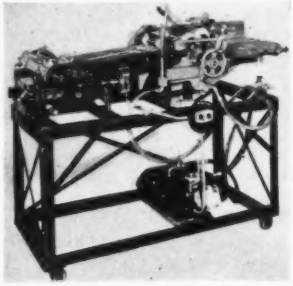
ACCURATE EDGE REGISTRATION

is provided by a compact dual-beam electronic system developed by Airlectron, Inc., for use in the textile and printing industries. The unit consists of a cast-aluminum sensing head measuring 3½ by 4 by 8 in. which contains all working parts except the relays and transformer and a compact main control system which can be mounted at any desired distance from the control point and can handle up to 3 h.p. or any electro-hydraulic system. Other interesting features are the new swivel correction-range adjustment eliminating all mechanical parts, aircraft-type vibration-proof mounts, manual push-button station, automatic cut-in circuits and fail-safe operation. Two models are available for different degrees of accuracy: Model 5 for 0.03-in. total and Model 6 for 0.005-in. total. "Linar Edgetrol" Bulletin EC-155 gives further information and is available from the company's sales office at 110 Washington St., New York 6.



AUTOMATIC-FEED GLUING MACHINE

which is said to be low in cost, efficient and fast operating has been developed by Potdevin Machine Co., 1285 38th St., Brooklyn. The entire unit, continuous-type feeder and gluing machine, is permanently mounted on a portable stand and is available in 12-, 21- or 27-in. widths. Stock is fanned out on the feeding table and conveyed to an automatic air wheel which feeds the sheet into the gluing mechanism. Feeding speed can be manually controlled or automatically fed at predetermined intervals. The machine can handle any weight of paper up to five-ply index.



LOW-COST PALLET-TIERING METHOD

which converts any standard three-stringer wood pallets into stacking pallets by four simple socket assemblies is a recent development of The Paltier Corp., 53 W. Jackson Blvd., Chicago. The one-piece socket assemblies are secured to the corners of the pallets by three lag screws. Into the sockets, posts of the required length and strength are fitted and finally two cross bars are fitted over the top of the posts to complete the new stacking feature. The stacking assembly, called Pal-

PERFECT PACKAGING
WITH
PETERS MACHINES

ECONOMICAL!

SPEEDY!

ACCURATE!

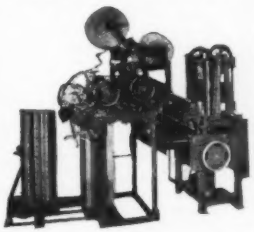
Money, time and labor are important items in packaging your products!

Discover now how the use of Peters machinery can assist you in saving on all three factors.

For high speed carton packaging, Peters offers its "Senior" line of packaging machinery, illustrated below.

Besides the "Senior" models, Peters has available for those with lower production requirements, a "Junior" line of very versatile packaging machines.

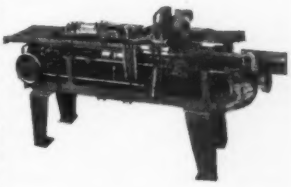
60 CARTONS PLUS PER MINUTE!



This PETERS SENIOR CARTON FORMING AND LINING MACHINE EQUIPPED WITH AUTOMATIC CARTON & LINER FEEDING DEVICE sets up 60 or more cartons per minute, depending upon size of carton used. Machine is automatic. After cartons are set up, they drop onto a conveyor where they are carried to be filled.

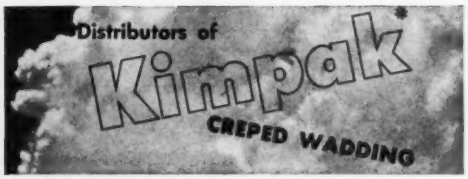
FULLY AUTOMATIC!

This PETERS D & W TYPE SENIOR CARTON FOLDING & CLOSING MACHINE closes 60 or more cartons per minute, depending upon size of carton used. Fully automatic, no operator required. The packages enter the machine on conveyor belt as open, filled cartons and leave the machine completely closed, ready to be packed for shipment or to be conveyed into a wrapping machine.



Send us samples of the various cartons you are now using. We will gladly send specific recommendations.

PETERS MACHINERY COMPANY
GENERAL OFFICE AND FACTORY
4700 RAVENSWOOD AVE., CHICAGO 40, ILL.



ALABAMA
Graham Paper Co. . . . . Birmingham

ARIZONA
Blake, Moffitt & Towne. . . . Phoenix, Tucson
Graham Paper Co. . . . . Phoenix
Zellerbach Paper Co. . . . . Phoenix

CALIFORNIA
Blake, Moffitt & Towne. . Fresno, Long Beach, Los Angeles, Oakland, Sacramento, San Bernardino, San Diego, San Francisco, Santa Rosa, San Jose, Stockton
Zellerbach Paper Co. Emeryville, Fresno, Los Angeles, Oakland, Sacramento, San Diego, San Francisco, San Jose, Stockton

COLORADO
Carpenter Paper Co. . Denver, Pueblo
Graham Paper Co. . . . . Denver

CONNECTICUT
Charles F. Hubbs & Co. . . Bridgeport
The Rourke-Eno Paper Co. . Hartford

FLORIDA
Graham-Jones Paper Co. Jacksonville, Tampa

GEORGIA
Graham Paper Co. . . . . Atlanta
National Paper Co. . . . . Atlanta
Somerville-Saybold Div. of Henley Paper Co. . . . . Atlanta

IDAHO
Blake, Moffitt & Towne. . . . . Boise

ILLINOIS
Abana Products. . . . . Chicago
Bradner Smith & Co. . . . . Chicago
Graham Paper Co. . . . . Chicago
Knox & Schneider Paper Co. Chicago
S. V. Cain, Inc. . . . . Peoria

INDIANA
Crescent Paper Co. . . . . Indianapolis
Schwartz Paper Co. . . . . South Bend

IOWA
Carpenter Paper Co. . . . . Des Moines, Sioux City

KANSAS
Carpenter Paper Co. . . . . Topeka
Graham Paper Co. . . . . Wichita

KENTUCKY
Graham Paper Co. . . . . Louisville

LOUISIANA
Graham Paper Co. . . . . New Orleans

MAINE
Carter Rice & Co. Corp. . . . . Augusta

MARYLAND
Hubbs & Corning Co. . . . . Baltimore
The Whitaker Paper Co. . . . . Baltimore

MASSACHUSETTS
Carter Rice & Co. Corp. . . . . Boston
H. J. Dowd Co., Inc. . . . . Cambridge
Charles A. Esty Paper Company. . . . . Worcester
Bulkley, Dunton & Co. Inc., Springfield

MICHIGAN
Cartright Paper Co. . . . . Battle Creek
The Whitaker Paper Co. . . . . Detroit
Beecher, Peck & Lewis. . . . . Flint
Graham Paper Co. . . . . Grand Rapids
Crown Paper & Bag Co. . . . Jackson
Bermingham & Prosser Company. . . . . Kalamazoo
The Weissinger Paper Company. . . . . Lansing
Reid Paper Co. . . . . Saginaw

MINNESOTA
Graham Paper Co. . . . . Minneapolis
Carpenter Paper Co. . . . Minneapolis St. Paul

MISSOURI
Carpenter Paper Co. . . . . Kansas City
Graham Paper Co. . . N. Kansas City, St. Louis
Smith-Scharff Paper Co. . . . . St. Louis

NEBRASKA
Carpenter Paper Co. . Grand Island, Lincoln, Omaha

NEW MEXICO
Carpenter Paper Co. . . . . Albuquerque
Graham Paper Co. . . . . Albuquerque

NEW YORK
Hubbs & Howe Co. . . . . Buffalo, Niagara Falls
Heller & Usdan. . . . . New York
Hubbs Paper Co., Inc. . . Mineola, L. I.
Charles F. Hubbs & Company. . . . . New York
Herbert A. Post, Inc. . . . . New York
The Alling & Cory Co. . . . . Rochester
J. & P. B. Garratt Co. . . . . Syracuse

NORTH CAROLINA
Southern Paper Products Co. . . . . Asheville
Henley Paper Co. . . . . Charlotte, Gastonia, High Point
Dillard Paper Co. . . . . Charlotte, Greensboro, Wilmington
Hubbs & Howe Co. . . . . Greensboro

OHIO
Millcraft Paper Co. . . . . Akron
The Chatfield Paper Corp. . . . . Cincinnati
The Whitaker Paper Co. . . . Cincinnati
Hubbs & Howe Co. . . . . Cleveland
Rosse-Edwards Paper Co. . . Cleveland
The Sciota Paper Co. . . . . Columbus
The Ohio & Michigan Paper Company. . . . . Toledo
Toledo Lithograin & Plate Co. . . . . Toledo

OKLAHOMA
Carpenter Paper Co. . . Oklahoma City
Graham Paper Co. . . . Oklahoma City
Tulsa Paper Co. . . . . Tulsa

OREGON
Blake, Moffitt & Towne. . . . Portland
Zellerbach Paper Co. . . . . Portland

PENNSYLVANIA
Hubbs & Howe Co. . . . . Erie
D. L. Ward Co. . . . . Philadelphia
The Chatfield & Woods Co. of Pa. . . . . Pittsburgh
Morris Paper Co. . . . . Johnstown
J. N. L. Smythe Co. . . . . Philadelphia
Williamsport Paper Co. Williamsport

RHODE ISLAND
Carter, Rice & Co. Corp. . Providence

SOUTH CAROLINA
Dillard Paper Co. . . . . Greenville

TENNESSEE
Clements Paper Co. . . . . Nashville
Graham Paper Co. . . . . Memphis, Nashville
Wurzburg Bros. . . . Memphis, Nashville

TEXAS
Carpenter Paper Co. . . . . Dallas, El Paso, Fort Worth, San Antonio
Graham Paper Co. . . . . Dallas, El Paso, Houston, San Antonio

UTAH
Carpenter Paper Co. . . . . Ogden, Salt Lake City
Zellerbach Paper Co. . . . . Salt Lake City

VIRGINIA
Dillard Paper Co. . . . . Bristol, Roanoke
Hamilton Paper Cor. . . . . Richmond

WASHINGTON
Blake, Moffitt & Towne. . . . . Seattle, Spokane, Tacoma
Zellerbach Paper Co. . . . . Seattle, Spokane
Spokane Paper & Stationery Company. . . . . Spokane

WEST VIRGINIA
Morris Paper Co. of W.VA. Clarksburg

WISCONSIN
Wisconsin Paper & Products Co. . . . . Milwaukee
Sawyer Paper Co. . . . . Neenah
Service Paper Co. . . . . Racine

CANADA
P. P. Barber Machinery Company, Ltd. . . . Toronto, Ontario
Mid-West Paper Sales Ltd. Winnipeg, Manitoba

HAWAII
The Honolulu Paper Co. Ltd. . . . . Honolulu, T. H.

*T. M. REG. U. S. PAT. OFF.

KIMBERLY-CLARK CORPORATION, Neenah, Wisconsin

250 Park Ave. New York 17 • 135 Sansome St., San Francisco 4 • 8 S. Michigan Ave., Chicago 3 • 22 Marietta St., Atlanta 3, Ga.

Equipment and Materials
Continued

team, can be easily adjusted for any type of crushable or odd-shaped material by changing the length of the posts.

PRECISION ELECTRONIC COUNTER TACHOMETER

for high-accuracy revolution and frequency measurements of turbine, motor and engine speeds has been announced by Potter Instrument Co., Inc., 115 Cutter Mill Rd., Great Neck, N. Y. Fundamentally, the instrument totalizes the number of counts derived from the source being measured during a precisely established interval of 0.6 sec. (0.01 min.). This reading is displayed on a direct-reading electronic counter.



After each measurement and display period, the instrument automatically resets and recycles. The display time is adjustable over a period of 0.5 to 4 sec., or can be adjusted to hold the count indefinitely. The instrument can be used to measure frequencies up to 100,000 cycles per second with an accuracy of plus or minus one cycle and includes a count rate meter which can be used when the unknown frequency source is being adjusted. The tachometer can be supplied with electromagnetic or photoelectric pick-up devices for detecting speed without physical contact.

NEW HAND-SEALING IRON

to speed the packaging of irregular-shaped foodstuffs has been developed in the Pliofilm Packaging Laboratories of the Goodyear Tire & Rubber Co., Akron, Ohio. The sealer is a lightweight heated sleeve which can be easily rolled across the film surfaces to be sealed rather than employing a sliding or patting motion practiced with other types of hand irons. The roller action tends to smooth protruding edges more efficiently and, because it develops less friction, is said to require less effort to use, thus raising wrapping efficiency. The iron, especially designed for wrapping red meats for self-service supermarkets, has been recently released by Goodyear to a number of manufacturers.



PORTABLE DESICCANT STORAGE CONTAINER

for handling silica gel and humidity indicator cards has been developed by D. C. Cooper Co., 1467 S. Michigan Ave., Chicago. The cabinet (illustrated) is provided with four sections—each section subdivided into a total of 10 compartments—for daily storage of silica-gel bags ranging from 5 gms. to 5 lbs. and one compartment for humidity indicator cards.



The company also announces the development of a plastic dip tank for use in coating spare parts for storage and export shipment with cellulose-acetate-butyrate, ethyl cellulose strip coatings and similar compounds requiring high tempera-

Kimpak Float Packaging*



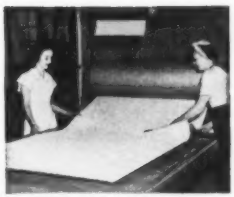
POSTER BED
Surface Protection

Cuts shipping costs — reduces damage in transit!

Last year, dozens of manufacturers of furniture and other products revised and streamlined their packaging operations based on facts and figures about KIMPAK* Float Packaging. They found, through actual comparison, that KIMPAK offered more economical, more *dependable* packaging protection. And because there is a specification of KIMPAK for every cushioning need, these facts may apply to your packaging operation as well:

- KIMPAK creped wadding, in rolls or sheets, is as easy to apply as wrapping paper. It saves literally hours in the shipping room.
- KIMPAK is clean and free from damaging foreign matter; will not scratch, rub or pressmark delicate finishes. It's *pleasant* to handle.
- KIMPAK is a highly efficient cushioning material—made *especially* to absorb continuous vibration and severe shocks, defend against roughest handling. Its "springy" resiliency provides *float packaging*—the world's most effective shipping protection.
- KIMPAK is the neatest, most attractive cushioning for your product. It's fresh-looking both *before* and *after* using—completely eliminates litter and mess in unpacking.

Today, won't you investigate KIMPAK Float Packaging, and compare it with your present methods? For immediate detailed information, contact the KIMPAK distributor listed in your classified phone directory under "Packing Materials" or "Packing Materials—Shipping", or write to Kimberly-Clark Corp., Neenah, Wis.



1. Sheets of correct dimension are easily cut from rolls of KIMPAK. No waste.



2. All finished surfaces of head and foot pieces are completely protected by KIMPAK.



3. As each KIMPAK sheet is applied it is firmly attached by stapling, taping or tying.



4. Final KIMPAK-wrapped package is now ready for loading into full freight car, eliminating any further packaging protection.

All photographs courtesy of New Orleans Furniture Manufacturing Co.

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES

CREPED WADDING

A PRODUCT OF Kimberly Clark RESEARCH

*T. M. REG. U. S. PAT. OFF.

FREE BOOKLET

KIMBERLY-CLARK CORPORATION MP-1050
Neenah, Wisconsin

Please send me free, the illustrated KIMPAK Booklet, "Float Packaging".

Name _____

Firm _____

Address _____

City _____ *Zone* _____ *State* _____

DOWN THRU THE YEARS

1935

1946

1947

1948

1949

1950

WAX

HAS BEEN OUR BUSINESS...

For fifteen years Bareco has refined and sold microcrystalline waxes designed to fit the consumer's needs. The numerous grades of wax developed by the company have found applicability in hundreds of usages.

The specialized nature of these waxes results from (1) Careful selection of raw materials, (2) Emphasis upon wax as the primary product and not a by-product, (3) Careful manufacturing controls developed over many years experience.

Bareco's multitude of regular customers could testify to the assurance of a steady supply of uniform waxes at competitive prices.

Descriptive literature and prices along with wax samples are available upon request. Also write Bareco for "The Wax Story" an interesting pamphlet series just recently completed.



BARECO OIL COMPANY

Box 2009
Tulsa, Okla.

121 S. Broad St.
Philadelphia, Pa.

Equipment and Materials
(Continued)

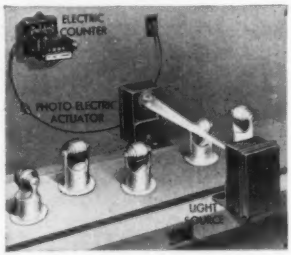
tures, accurately controlled. The insulated tank, ranging from 3½ to 1,000-gal. capacities, has separate thermostat controls for oil bath and coating tank.

NEW BAR-TYPE HEAT SEALER

for polyethylene, saran, Pliofilm and acetate films up to 0.006 in. in thickness has been introduced by the Vertrod Corp., 17 Williams Ave., Brooklyn. New patented sealing method, called Thermal Impulse, is said to insure uniform, electronically controlled seals without extrusion which exhibit good tear resistance. The sealer, equipped with adjustable knobs for controlling heat pulse and time duration, is foot operated and requires no heat-up time. It is available with 9- and 14-in. standard sealing bars, with other sizes on special order, and has facilities for take-off from roll stock.

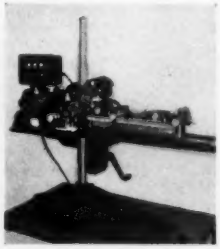
PHOTOELECTRIC COUNTING UNIT

consisting of a counter, light source and photo-electric actuator is manufactured by The Autotron Co., Box 722-N, Danville, Ill. This midget-size unit is designed to handle a wide variety of industrial counting jobs and is supplied fully adjusted. The "Counting Eye" is available with cords for plug-in connection or with terminal connectors for permanent wiring on 115- or 230-volt, 60-cycle services. The actuator and light source are fully enclosed in cast-aluminum cases and are supplied with adjustable mounting brackets.



HIGH-SPEED ROTARY HEAT SEALER

for sealing polyethylene and other thermoplastic bags has been introduced by Amsco Packaging Machinery, Inc., 31-31 38th Ave., Long Island City, N. Y. Special sealing devices have been incorporated in Amsco's newest development which are said to eliminate sticking of the bag material to the sealing rollers. High sealing speeds are said to be possible with the new machine because of a 16-in. closed-top preheater which conditions the plastic before entering the sealing mechanism. Another feature is that packages can be supported by the carrier belts of the machine without the need for any other supporting device. The automatic rotary sealer is available in vertical floor and bench models with adjustable sealing-head construction to accommodate practically any length bags.



A NEW VALVE-BAG PACKER CONVEYOR

which is motor driven and especially designed to operate in connection with valve-bag packers has been developed by the Flexoveyor Mfg. Co., 1220 S. Acoma St., Denver, Colo. A series of endless spring belts running over grooved rolls forms the conveying element, which is reversible. Any loose material

Protective PACKAGING MATERIALS

PACKAGING MATERIALS, BAGS, POUCHES AND MOISTURE VAPOR-PROOF BARRIERS to meet Gov't.

Specs.:

JAN-P-131 JAN-P-125 AN-C-67b JAN-B-121 JAN-P-117 AN-B-20 AN-E-1b

BOX LINERS— fabricate of Waterproof or Vinyl Coated Plastics

"AQUASTOP"— the "breathing" waterproof package. Eliminates all possibility of condensation and its subsequent damage within the sealed liner.

"VIN PAK" — All of the features of "AQUASTOP" at one-third the cost.

Grease-Proof or Waterproof Bags

Put our Technical Packaging Assistance to work on your packaging problems.

PROTECTIVE COATINGS CORPORATION
ATLAS PACKAGE & CONTAINER CORP. DIV.

Manufacturers—Converters—Consultants

514 River Road Clifton, N. J.



quality.....

service....

for

38 years

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WE ARE PROUD
OF OUR RECORD

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Years of experience will help us give you the best in SERVICE and QUALITY for the future.

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OLIVE CAN CO.

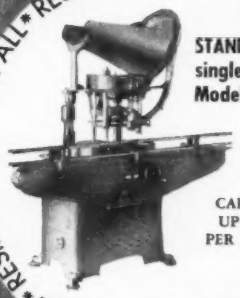
450 N. LEAVITT St.

CHICAGO 12, ILLINOIS

RESINA CAPPERS

A model for every purpose...
A speed for every need!

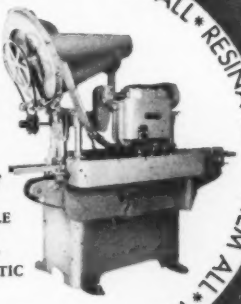
RESINA TOPS THEM ALL



STANDARD single Head Model

CAPACITY UP TO 60 PER MINUTE

RESINA TOPS THEM ALL



HIGH SPEED straight line screw capper

FLEXIBLE
FAST
FULLY AUTOMATIC

RESINA TOPS THEM ALL

SEMI AUTOMATIC CAPPER

Not an ordinary cap tightener but a real Semi Automatic Screw Capper



Requires no Operator

RESINA TOPS THEM ALL

other Models available

RESINA AUTOMATIC MACHINERY COMPANY, INCORPORATED

COURT & CREAMER ST., BROOKLYN 31, NEW YORK

Rayco
DAY-GLO®
Fluorescent
FLOCK
By arrangement with Switzer Brothers, Inc.

A really NEW idea to make your package stand out



Write for color samples and source of supply for DAY-GLO Flocked paper.

Please direct all inquiries concerning DAY-GLO FLOCK to

Rayon Processing Co. of R. I., Inc.

PIONEER PRODUCERS OF SURFACE-COATING FLOCKS

110 Moshassuck St. Pawtucket R. I.

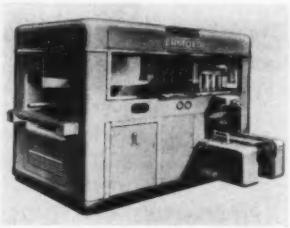
Equipment and Materials

Continued

collecting on the outside of the bag or around the packer drops through the springs and to the floor, where it can be cleaned out at regular intervals, thus avoiding the problem of material building up on belts and bags stalling.

AUTOMATIC UNPACKER

for removing standard containers from cartons, deep or shallow cases and trays was exhibited at the International Brewing Industries Exposition in Philadelphia this month. The production - model unpacker, manufactured by Edward Ermold Co., 652 Hudson St., New York, empties filled or partially filled cases, discharges containers onto a continuous conveyor and releases empty cases to a conveyor on either side of the machine. Over-all dimensions of the machine are 6 by 6 by 6 ft. and it can handle cases ranging from 14¹/₄ to 24 in. long, 10¹/₄ to 17¹/₄ in. wide and 7¹/₄ to 12¹/₂ in. high, with easy adjustment for size changes.



LIQUID RESORCINAL RESIN

which is said to be a type of cold-setting wood glue that meets military specifications for waterproof, boilproof bonds is offered by the Chemical Div., The Borden Co. Information on the Casecophen resin is available from The Borden Co., Chemical Div., Dept. PR, 350 Madison Ave., New York 17.

NEW MARKING PEN

said to be non-leaking, self-filling and smearproof has been introduced by The Time Saving Specialities Co., Minneapolis, Minn. The manufacturers report that the new pen, called the Vaporite Fynest Lyne, will write a 1/16-in. line on a wide variety of surfaces including all paper food labels, cellophane, metals, glass, foils and plastics.

NEW COATING PAN

for coating tablets, pills, candy products, etc., has been introduced by F. J. Stokes Machine Co., 5900 Tabor Rd., Philadelphia. The new stand is totally enclosed so that all moving parts are fully protected and cleaning is simplified. The pan shaft is strongly supported and designed to give trouble-free operation under the full loads of pans of 42 in. or more in diameter, it is said.



The electrical contactor and built-in foot-operated switch, conveniently located for the operator, are also new features which are said to lend to the ease of control of the machine.

SELF-ADHESIVE TAPES

that are slit, perforated and two-color printed may be obtained from the Printed Cellophane Tape Co., 328 N. La Brea, Los Angeles, Calif., as the result of newly installed equipment which the firm claims will double its capacity.

INTA-ROTO

MACHINE COMPANY

Builders of

- Glue Mounting, Coloring, Coating and Laminating Machines
- Rotogravure Base Cylinders
- Laboratory Equipment for Testing Gravure Inks, Lacquers and Laminants

Consultants to

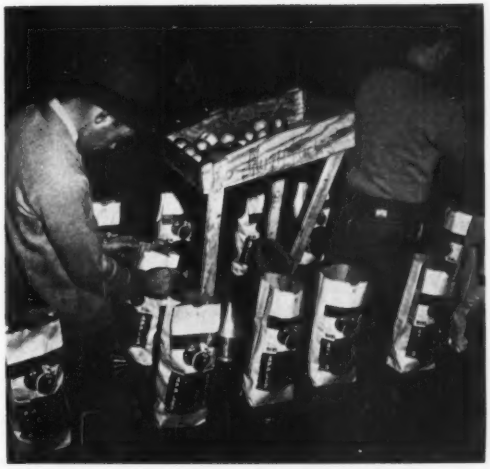
- Rotogravure Printers and Converters of Foil, Cellophane and Paper

Got a Roto Problem?

Maybe Inta-Roto can help you . . . we'd like to try! Our experience covers almost every phase of design, building and operation of rotogravure equipment.

Write to

INTA-ROTO MACHINE CO., INC.
Byrd Airport, R.F.D. 6
Richmond, Virginia



A sound apple packaging checkweighing operation using fast end-tower EXACT WEIGHT Scales. Pioneer Potato Co., Hightstown, N. J.

Checkweighing the Fractional Package . . .

The fractional package (a breakdown of the standard package into two, three or more units of use for convenience to the user . . . preserving freshness of the unused product . . . and increasing sales volume for processon) requires a higher degree of weight accuracy than larger units. The reason? Units are smaller and fraction-ounce weights are present. If your present scales do not meet such specifications weights will not be accurate. The test is absolute accuracy with speed of operation added. Only EXACT WEIGHT Scales, with fraction-ounce dial markings, will assure the results demanded in fractional unit packaging. In fully automatic operation when counting is practiced sound checkweighing protects you against the underweight container. Write for details to fit your needs.

Sales & Service from Coast to Coast

EXACT WEIGHT SCALES

Industrial Precision

THE EXACT WEIGHT SCALE COMPANY

222 W. Fifth Ave., Columbus 8, Ohio
2920 Bloor St., West, Toronto 18, Canada

Plants & People

The appointment of **George P. Lehmann** as genéral sales manger of the **Plastics Division** of **Continental Can Co.**, Cambridge, Ohio, has been announced. Mr. Lehmann was formerly with the Plastics Division of the General Electric Co. Continental also has announced the appointment of **Arthur L. Smith** as manager of the Plastics Division's research and development and **Mario J. Petretti** as chief engineer of the division.



G. P. Lehmann

John W. Sale has been named general manager of paper manufacturing for Continental's **Hummel-Ross Division** at Hopewell, Va., and the **Gould Paper Co.** of Lyons Falls, N. Y., a subsidiary of Continental Can. Mr. Sale takes over the duties formerly held by **R. W. Shaver,** who recently resigned. **E. H. Graves** will manage the Hopewell plant and **Lester J. Smith** will manage the Lyons Falls facilities.

Continental's fibre drum plant at Tonawanda, N. Y., has resumed full production on a one-shift basis after a suspension of activities since last fall. The plant continues under the management of **P. E. Kreischer.**

The Union Paste Co., Hyde Park, Mass., announces its products are now available on a nationwide basis and in Canada as a result of arrangements made with adhesive manufacturers in other areas, who desired a wider line of products.

Most of the products available under this distribution set-up will be in the category of resin emulsion and lacquer adhesives for the conversion of various cellulose films, foil, etc., in the packaging industries. The East Coast will continue to be serviced out of the company's main plant at Hyde Park. The **F. G. Findley Co.** will continue to represent the Union Paste Co. in the Middle West, with plants and warehouse facilities in Milwaukee, Wis., and Houston, Tex. The citrus and other canning industries in Florida will be served by **The American Machinery Corp.** of Orlando, Fla. The **H. B. Fuller Co.** of San Francisco will offer the complete UPACO line of specialty emulsions and lacquers to the packaging converters on the West Coast. The Canadian market is being serviced by **Industrial Adhesives, Ltd.,** of Toronto, Ontario.

The Union Paste Co. also announces the appointment of **Nathaniel Kosak** as a packaging engineer on the sales staff.

Standard-Knapp Division of Hartford-Empire Co. will manufacture and handle sales of Rockwell cartoning machines from its Portland, Conn., headquarters Hartford-Empire Co. has purchased the Rockwell business from **Rockwell Packaging Machines, Inc.**

Malcolm Smith, sales engineer for several years at the home office of the **New Jersey Machine Corp.,** Hoboken, N. J., has been appointed branch sales manager of the Chicago office.

The board of directors of the **United Board & Carton Corp.,** Syracuse, N. Y., has named **Edwin W. Kaler,** formerly general sales manager, vice president of the corporation. Mr. Kaler's former business associations were with Archer Mills, Inc., Daystrom Corp., DeLuxe Clock & Mfg. Co. and Talon, Inc.



E. W. Kaler

Also announced by **United Board & Carton** is the appointment of **Robert B. McCormack** to the carton sales staff covering Northern New Jersey and Orange and Rockland Counties in New York. **Warren J. Gottemeyer** and **Carl R. Spadt** have also been appointed to the carton sales staff and will attend the company's sales training course before being assigned sales territories.

Donrico, Inc., 438 W. 37th St., New York, specializing in modern printing, bronzing and embossing and widely known for decorative box wraps, folding cartons, printed foils and laminations, particularly in the cosmetic field, is observing this year the 10th anniversary of its establishment in New York. The firm was previously one of the leaders in its field in Paris. **Enrico Donati,** a fine artist of considerable note, heads the firm as founder and president.



E. Donati

Several hundred prominent scientists, educators, industrialists, Army, Navy and Governmental officials attended a ceremony on Sept. 27 to mark the laying of the cornerstone for **Armstrong Cork Co.'s** new research laboratories. **Dr. Vannevar Bush,** president of the Carnegie Institution and wartime head of the Office of Scientific Research and Development, presented the main address. The new laboratories, covering 162,000 sq. ft. of floor space, are expected to be completed by mid-1951. The research buildings are located on a 40-acre site four miles west of the center of Lancaster.

The British Hartford-Fairmont Syndicate, Ltd., of London and Greenford, Middlesex, England, and the **Lynch Corp.** of Anderson, Ind., have jointly established a new company entitled **Lynch International, Ltd.** This organization will manufacture Lynch machines and spare parts in England and thus better serve the British glass industry. Directors of the new company are **R. Graham Bailey, T. C. Werbe, M. H. Pendergast, Ian M. Bailey, J. W. J. Moir** and **J. B. Livingston.** Officers of the company are: chairman, **T. C. Werbe;** deputy chairman and managing director, **R. Graham Bailey;** secretary, **J. V. Herz-Smith.** Registered office will be at 148 Audrey House, Ely Place, London, E. C. 1, England.

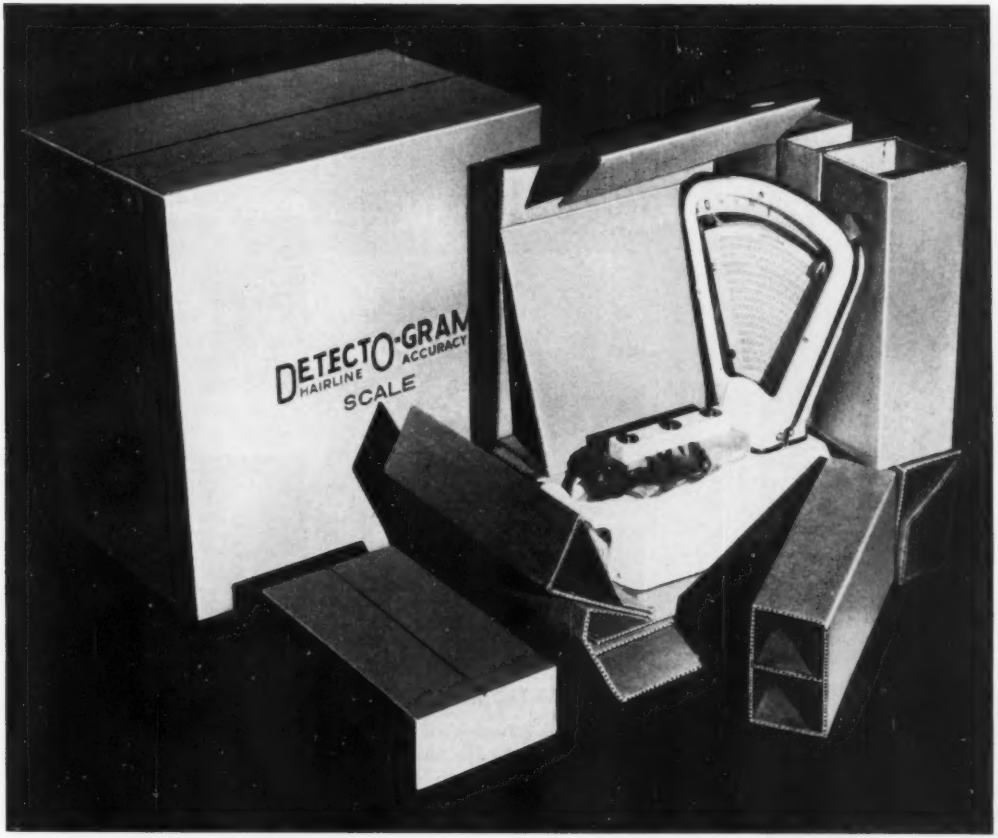
New research and development laboratories and a complete manufacturing plant were recently put into operation by **Surface Chemicals, Inc.,** at its new location in McKees Rocks, Pa. The company has developed many special protective coatings for collapsible tubes and tinplate containers.

Anchor Hocking Glass Corp. announces the appointment of **Frank Baumgardner,** formerly manager of the Chicago sales office, as manager of market analysis and development. **Bernard P. Fox** succeeds Mr. Baumgardner in Chicago. Also announced is the appointment of **Brooks Brown, Jr.,** as manager of the company's Louisville office. **Brooks Brown, Sr.,** remains with the office as consultant.

A new sales office has been established in Hamilton, Ontario, by the **Sprague-Sells Division, Food Machinery & Chemical Corp.,** to serve the needs of the expanding Canadian canning and freezing industries. The new arrangement will not affect canners in Alberta and British Columbia, who will continue to be served by the **Anderson-Barngrover Division** of Food Machinery & Chemical Corp., San Jose, Calif.

George L. Hanna has been appointed sales engineer for **Nelson Equipment Distributors,** Indianapolis, representative for the **Automatic Transportation Co.,** Chicago, manufacturer of Automatic

Creative Package Engineering



this corrugated "shock-proof" shipping box

Supports its contents . . . excludes foreign materials . . . resists abrasion . . . cushions delicate assemblies . . . braces . . . provides clearance for all parts . . . shields surface from scratching, chipping . . . pads corners . . . protects product throughout. For perfect protection for any product at lowest possible cost consult Hinde & Dauch, Executive Offices, 5006 Decatur St., Sandusky, Ohio.

H&D®

HINDE & DAUCH

Authority on Packaging

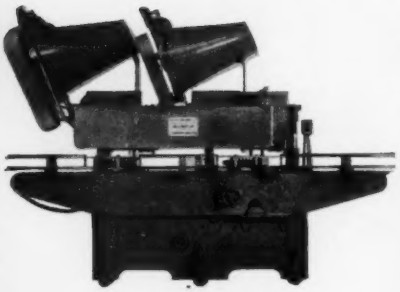
"Behind The Scenes at the Package Laboratory." Discover how packaging bottlenecks are broken, waste eliminated, costs cut, sales stepped up through intelligent packaging. Write for your copy.



FACTORIES AND SALES OFFICES IN: Baltimore • Buffalo • Chicago • Cleveland • Detroit • Gloucester, N. J. • Hoboken, N. J. • Kansas City, Kan. • Lenoir, N. C. • Richmond, Va. • Sandusky, Ohio St. Louis • Watertown, Mass. SALES OFFICES IN: Akron • Battle Creek • Cincinnati • Columbus • Denver • Erie, Pa. • Fairfield, Conn. • Findlay, Ohio • Greensboro, N. C. • Indianapolis • Miami Minneapolis • Olean, N. Y. • Omaha • Philadelphia • Pittsburgh • Reading, Pa. • Roanoke, Va. • Rochester • Toledo • Worcester, Mass. IN CANADA, HINDE & DAUCH PAPER CO. OF CANADA, LTD., Toronto • Montreal • Chatham • Calgary • Halifax • Hamilton • Kitchener • London • Peterborough • Quebec • Regina • St. John, N. B. • St. John's, Newfoundland • Vancouver • Winnipeg

Sealing Unlimited

...for LIFE of CONTAINER and PRODUCT



UPRESSIT CAPS APPLIED BY RESINA FULLY-AUTOMATIC MACHINE

Applying, closing and crimping of Upressit Caps and tamper-proof bands can now be accomplished with the Resina fully-automatic machine. This machine seals containers from the ½ pint to two and one-half gallon size as fast as the filling machine delivers them, at rates up to 4000 per hour.

Customers are familiar with the many advantages of Upressit Caps . . . no leakage . . . no evaporation . . . no staleness. No difficulty in opening package. No tools required. Just snap cap off with mere finger pressure... reseal it, air-tight, with thumb and two fingers.

For further information on the Resina fully-automatic machine . . . semi-automatic equipment . . . hand-tools . . . or Upressit Seals and Over-seals, write . . .

U PRESS IT

UPRESSIT PRODUCTS CORPORATION

120 LEXINGTON AVENUE NEW YORK 17 N Y

Plants & People

(Continued)

Skylift trucks and Transporter operator-led industrial trucks. Mr. Hanna will cover the Southern Indiana area.

The Packaging Machine Div. of **Lynch Corp.**, Toledo, Ohio, announces the following promotions: **F. G. Lenhart** is



F. G. Lenhart



R. N. Craven



P. D. Fromer

now sales engineer for the Eastern territory, **R. N. Craven** is sales engineer for the Mid-Eastern territory and **Paul D. Fromer** succeeds Mr. Craven as service manager. All three men will have their headquarters in the Toledo office.

Carl L. Brickman, formerly head of the laboratory at Thomas M. Royal & Co., is now associated with the **Benj. C. Betner Co. of Va., Inc.**, Richmond.

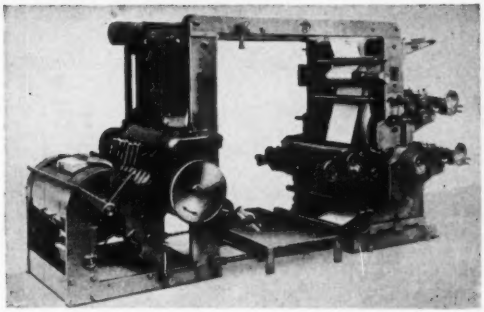
Facilities of the Canadian plant of the **Arner Co.**, Buffalo, N. Y., pharmaceutical manufacturer and contract packager, are being expanded. An entire new floor of steel and concrete over the original two-story building is expected to be completed by early winter.

Plans for the construction of two adjoining buildings for warehouse and sales-office space in Atlanta, Ga., have been announced by the **Minnesota Mining & Mfg. Co.** Both units are expected to be ready for occupancy by Jan. 1.

Ground has been broken and the preliminary construction begun on **Acme Steel Co.'s** new $125,000 building at Perry Ave. and Acme Rd., Riverdale, Ill. All visitor-centered activities will be housed in the new building.

Quaker City Paper Co., Philadelphia, announces the election of the following officers and directors: **Howard W. Lee**, vice president and treasurer; **Rob-**

15,000
~~9,000~~ SHEETS PER HOUR!



. . . available in cutoff lengths from 9⅞" to 25" graduated in multiples of ⅜". Width sizes range from 20" to 32". All sheets delivered properly aligned to allow removal from top of pile.



FULL INFORMATION ON REQUEST

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200 VARICK ST., NEW YORK 14

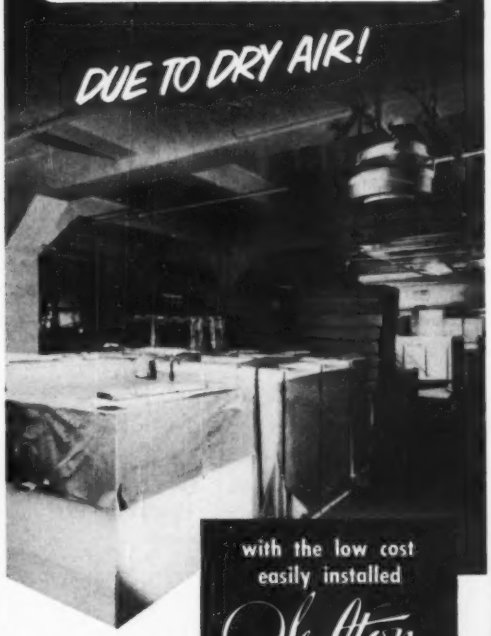
PROFITABLE MOVE

It's a short trip from shelf to shopping cart . . . and an easy, profitable one for packages wearing wraps or labels from Pacific Foil. Many western packers and bottlers find that Pacific's high quality gravure . . . on paper, plain or tinted foils . . . adds sales glamor to their product . . . glamor that pays off at the point of sale . . . makes that all-important trip from shelf to shopping cart quicker, easier, in greater day-to-day volume. Call Pacific's nearest office today. You'll find it's a profitable move!

PACIFIC COAST FOIL CO.
DIVISION OF JORGENSON & CO.
1107 BATTERY STREET, SAN FRANCISCO 11
1127 WILSHIRE BLVD., LOS ANGELES 14

ELIMINATE curled stocks...poor register and static troubles

DUE TO DRY AIR!



with the low cost easily installed
Walton
HUMIDIFICATION SYSTEM

PROTECTS COSTLY PAPER STOCKS AND IMPROVES PRINTING QUALITY

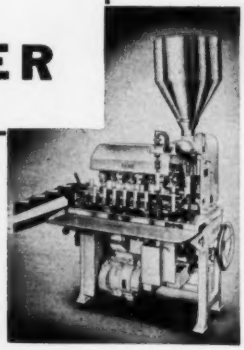
Now, complete protection from dry air problems is available without costly compressors, troublesome drains and duct work. WALTON Humidifiers require only a simple electrical and water connection, use no floor space and can be installed quickly, without interrupting normal production. Find out now, how WALTON Humidifiers provide complete protection, economically, from dry air—the primary source of curled paper stocks, poor register and production-slowing static.

SEND FOR THIS HELPFUL BOOKLET!
Explains the many cost-saving advantages of low-cost WALTON Humidifiers. USE COUPON BELOW!



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IRVINGTON, NEW JERSEY MP 10-50
Please send complete data to
NAME ..... TITLE .....
COMPANY .....
STREET .....
CITY ..... ZONE ..... STATE .....

ARENCO TUBE FILLER



Fills from 1 cc to 180 cc per stroke . . . with complete accuracy.

Fills, closes, seals and codes up to 55 tubes per minute. Easily cleaned—only stainless steel and Monel used in parts contacting the material filled.

- Automatic tube cleaning and cap tightening before filling
- Fills all materials—free-flowing to non-flowing
- Fat or fishtail filling—single, double or triple fold, without clip
- No tube, no fill. Quick change over of materials and sizes
- Turret attachment for filling jars
- Send *now* for details, illustrated folder

ARENCO **ARENCO MACHINE COMPANY**
INCORPORATED
25 West 43rd Street, New York 18, N. Y.



THE MOSSTYPER is full of helpful, up-to-the-minute information about all phases of printing with rubber plates. Issued regularly—sent *free* to anyone with an interest in paper converting and package printing. Send card or letter asking us to add your name to THE MOSSTYPER mailing list. No obligation, of course.

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33 Flatbush Ave., Brooklyn 17, N. Y.
Maker of MOSSTYPES® . . . the pre-madeready RUBBER PRINTING PLATES

Plants & People
(Continued)

ert S. Reed, vice president; **Raymond G. Underdown,** vice president; **G. Leslie Baker,** secretary; **George J. Geisz,** assistant treasurer and director; and **C. Albert Wheeler,** director.

Crown Can Co. announces the promotion of **Burk Kraleman** to district sales manager of the Pittsburgh branch office, replacing the late **John H. Donovan.**

The Irvington Varnish & Insulator Co.'s Cap-Seal Division has opened a Chicago office at 564 W. Monroe St., with **Robert M. Alderson** in charge.


J. I. Pritchett

John I. Pritchett has been appointed executive vice president and general manager of the **Highland Container Co.,** Jamestown, N. C. He joined Highland in 1947 after 12 years' experience in corrugated packaging work.

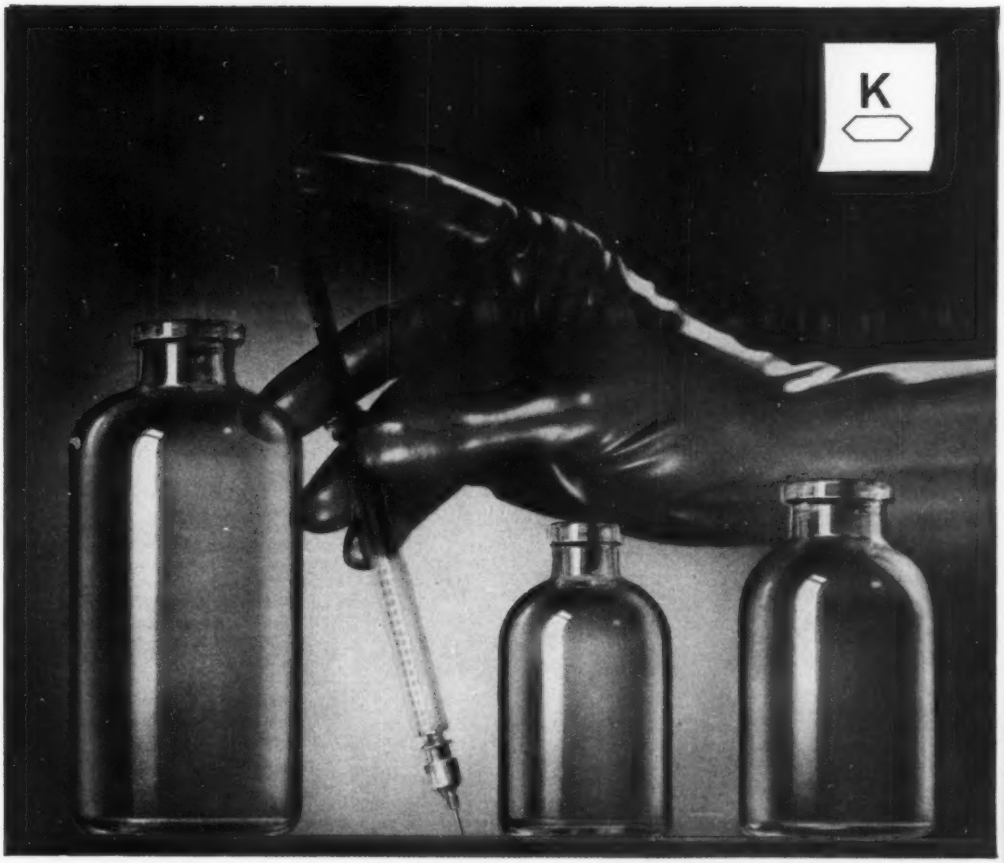
The Gardner Board & Carton Co., Middletown, Ohio, announces the election of two new vice presidents and the advancement of seven other company officials: **E. T. Gardner, Jr.,** vice president in charge of finance; **Colin Gardner, III,** vice president in charge of operations; **Colin Gardner** and **Walter E. Sooy,** executive vice presidents; **Robert B. Gardner,** senior vice president. **John J. Hain,** former controller, is now treasurer. **Floyd Lockard** was appointed controller and **Calvin Lloyd,** former cost-accounting head, is now assistant treasurer and assistant secretary. **Robert O. Brosius,** former assistant treasurer, was elected company secretary.

Also announced by Gardner Board & Carton Co. is the appointment of **Edward Quinn** as cost manager and **Paul Foehl** as cost accountant. **Dean K. Phillips** has been named assistant director of public relations.

Ground has been broken for a new $300,000 building designed to house ultra-modern facilities for Gardner employees as well as a warehousing area.

International Printing Ink has purchased from **Ohio Boxboard Co.** a large, modern industrial building in Rittman, Ohio, to house new branch office and ink facilities. **James Hocevar** will be in charge.

A large industrial site in Newark, N. J., has been purchased by **American Adhesive Mfg. Co., Inc.,** Brooklyn, for the



Neutraglas Molded Containers are obtainable in capacities from 1 ml. to 1,000 ml.

A bulwark of resistance to chemical change—

NEUTRAGLAS

NEUTRAGLAS is Kimble's borosilicate glass which has the highest resistance to chemical attack of any known workable glass.

You'll find that containers made of Neutraglas remain undaunted by anything they contain, be it acid, alkaline or even distilled water. Nothing they hold, nothing used to sterilize them makes the slightest difference to them. Thus they are of the utmost importance for protecting solutions requiring highest purity and consistent potency.

Kimble produces serum bottles, vials and ampuls in Neutraglas. For complete information and prices, please write. No obligation.

Specify Kimble for Assurance of Container Quality

KIMBLE GLASS TOLEDO 1, OHIO

Division of Owens-Illinois Glass Company



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FOR MILITARY PACKAGING

Data on construction, put-up, physical characteristics and uses obtainable on application.

GOVERNMENT APPROVALS

FLEXKIN AL-100
JAN-P-117 Type I—Grade A Classes A-B-C-D
AN-B-20 Type II All applications under AN-C-67

FLEXKIN AL-52
JAN-P-131, Amendment 3 Type I—Class B 40# load limit Type I—Class D

FLEXKIN AL-59
JAN-P-131, Amend. 3 Type I—Class A Type I—Class B 40# load limit
AN-B-20 Type II All applications including AN-C-67 & AN-E-1B
Wright Field for Air Force Airplane Engine Envelopes.

FLEXKIN AL-611*
JAN-P-131, Amendment 3 Type I—Class B 5# load limit Type I—Class D

FLEXKIN AL-111
JAN-P-131, Amend. 3 Type I—Class B 5# load limit

FLEXKIN AL-4-45*
JAN-P-117 Type II—Grade A—Classes A-B-C-D

FLEXKIN AL-6-80*
JAN-P-117 Type I—Grade A—Classes A-B-C-D

FLEXKIN AL-2-60*
JAN-P-117 Type I—Grade A—Classes A-B-C-D

*Paper Backed Materials

PACKAGING DIVISION:
ACME BACKING CORPORATION
BROOKLYN 6, N. Y.

Plants & People (Continued)

construction of additional manufacturing facilities.

M. P. Williams, president of **Cadillac Products, Inc.,** Ferndale, Mich., converters of wrapping materials, announces the appointment of his son, **Robert J. Williams,** to the position of production engineer. The company is adding another unit to accommodate the increase in business in its "Cadwrap" Dept.

The Georgia-Pacific Plywood & Lumber Co. has recently re-opened the Savannah plywood plant originally built by General Plywood Corp. The plant has an estimated production of 1.5 million ft. per month of G-P Crownply and G-P Plysheet.

American Can Co. has started construction of a new building adjacent to its present Tampa can-manufacturing plant for facilities that will substantially increase local metal-lithography capacity. The new unit, housed in a modern, one-story structural steel and brick building with 25,000 sq. ft. of floor space, will approximately duplicate the equipment of the original Tampa metal-lithography installation and is expected to be in production the first of next year.

H. E. Fisk, former executive vice president of the Outdoor Advertising Assn. of America, has been appointed Chicago representative of the **McCandlish Lithograph Corp.** His offices are at 122 S. Michigan Ave., Chicago.

Plans for construction of a 1½ million dollar plant have been announced by the **Central Waxed Paper Co.,** Chicago. The new plant will double the company's facilities for waxed and cellophane wraps.

John M. Angier, 41, president of **Angier Corp.,** Framingham, Mass., industrial paper manufacturers, died on Sept. 4, following a brief illness.

E. A. Van Wart, chief draftsman of **Package Machinery Co.,** Springfield, Mass., died suddenly of a heart attack on Aug. 16.

Andrew E. Lindas, formerly treasurer of **Pyroxylin Products, Inc.,** Chicago, died at his home in Escondido, Calif., on Aug. 24.

George R. Gibbons, one of the pioneers in the development of the aluminum industry and a director of **Aluminum Co. of America,** died Sept. 3 at West Penn Hospital in Pittsburgh at the age of 71.

FOR LOW COST—HIGH CAPACITY

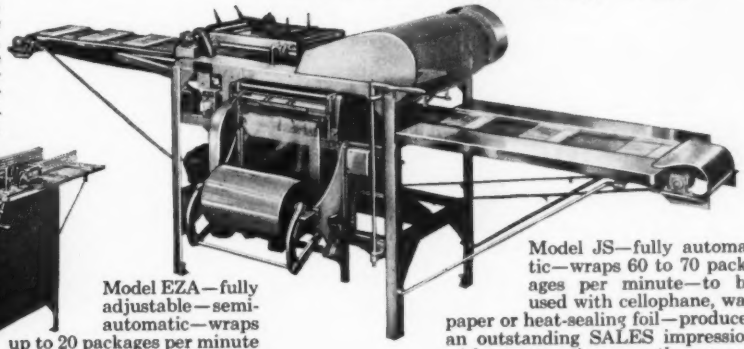
Product Packaging Use

GLOBE-KNAPP

PACKAGING MACHINES

The new Globe-Knapp wrapping machine produces a smart, taut wrap, at high speed efficiency for any square or rectangular packaging requiring individually wrapped units at LOW cost. Machines are streamlined in design, easy to operate, simple to maintain. Cut your overhead and get better sales results with a Globe-Knapp to fit your needs.

Don't Just Wrap—Knapp-Wrap



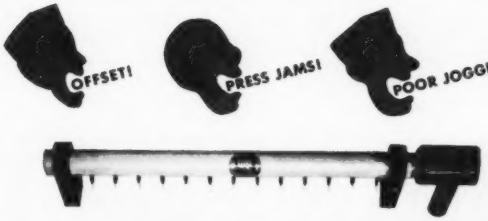


Model EZA—fully adjustable—semi-automatic—wraps up to 20 packages per minute—simple and compact in design, with 5 minute change-over to different size wrap.

Model JS—fully automatic—wraps 60 to 70 packages per minute—to be used with cellophane, wax paper or heat-sealing foil—produces an outstanding SALES impression with an attractive, smooth wrap exactly to *your* specifications. Investigate the Globe-Knapp system today

THE GLOBE COMPANY

4000 SO. PRINCETON AVENUE • CHICAGO 9, ILLINOIS



THEY CALL IT EVERYTHING BUT ....STATIC ELECTRICITY!

Call it anything from smear to excessive downtime . . . but recognize it as STATIC ELECTRICITY.

Printing plants everywhere that use the OXY NEUTRALIZER BAR have found it the solution to ALL their static problems.

Your GUARANTEE that the OXY NEUTRALIZER BAR is the SUREST, MOST ECONOMICAL method of static elimination is the actual TIME-TESTED EXPERIENCE of present OXY BAR users.

When present users of the OXY NEUTRALIZER BAR say . . .

"'You might recall that we decided to switch to your bars only because we expected low maintenance, but we will now agree with you that your bars eliminate static to a greater extent than any other bar we have used.'" . . . THEY'RE LOOKING FOR ECONOMY.

When they say . . .

"'. . . with our old bars we spent $1143.96 for maintenance over a period of 1½ years. The Herbert Bars are operating around the clock six days a week, and to date the repair bill has been 0.'" . . . THEY'VE FOUND IT.

The ONLY way you can be sure you're not paying for static electricity is to take definite ACTION against it. Insure your plant of fast, trouble-free production with the OXY NEUTRALIZER BAR.

**Excerpts from letters of present users of OXY NEUTRALIZER BARS. We invite your inspection of the entire file.*

FOR DETAILED INFORMATION AND PRICE LISTS WRITE DEPT. D-1

HERBERT *Products Inc.* 74-32 JAMAICA AVE. WOODHAVEN 21, N. Y.





MARKEM
can help you with that **NEW**
MARKING PROBLEM

Markem has helped hundreds of manufacturers to improve their methods of marking and to lower marking costs. Markem has developed and built machines to meet rigid marking requirements in most every field and in most every business, for regular production work and for meeting marking specifications on government contracts.

Identification marking and labelling is a highly specialized field, one to which the Markem Company has devoted its efforts and resources since 1911. Our broad experience may be of assistance to you in the solution of that new marking problem.

Write or ask to have our representative who is a specialist on marking and especially on marking requirements to meet government specifications call and discuss this with you. We can furnish machines, type and inks to meet your requirements. Ask us to make a survey of your marking operations and to make recommendations. No obligation of course.

Visit our booths 210 and 212 at the Industrial Packaging Show in Philadelphia, Oct. 10 to 12, and see in operation the latest type machines for marking boxes, labels, tags, tubes, industrial tapes and for marking directly on the product.

Put your Marking problem up to MARKEM



For Your Information

At a recent meeting of producers of corrugated and solid fibre containers, an organization was formed, known as the **Weatherproof Fibre Box Group,** a nonprofit, voluntary, unincorporated association with membership open to all producers of corrugated and solid fibre containers. Purpose of the group is to expedite production and delivery of fibre boxes in the quantities needed by the military and other Government agencies during the present emergency and to insure that such boxes meet specification requirements. **Gen. Everett Busch,** Commanding General of the Chicago QM Depot, addressed those attending the organization meeting. **Col. H. A. Johnson, L. E. Clayton** and **Henry Brinker** of the Depot were also present and informed the group of immediate Government needs and estimated demands for the next six months. **John V. Spachner,** executive vice president of Container Corp. of America, Chicago, was elected chairman and **Albert W. Luhrs** of Washington was chosen as consultant to the group.

An exhibitors' advisory board to assist in the direction of the **Plant Maintenance Show and Conference** to be held in Cleveland, Ohio, Jan. 15–18, is headed by **L. C. Morrow,** consulting editor, *Factory Management and Maintenance.* Advance registration cards for the show may be obtained from Clapp & Poliak, Inc., 341 Madison Ave., New York.

The Society of The Plastics Industry, Inc. will hold its annual national conference Oct. 18–20 in Swampscott, Mass. **George V. Sammet, Jr.,** of Northern Industrial Chemical Co., program chairman, announced that the conference will be held in cooperation with the Harvard Business School and will be restricted to SPI members.

Carlos Campbell, secretary of the National Canners Assn., presented a report on the nation's food supply, rationing and price controls to the board of directors of the **Canning Machinery & Supplies Assn.** at their recent mid-year meeting. Mr. Campbell said that he saw no need for rationing of food at the present time as there is an adequate supply of canned fruits and vegetables in inventory available for civilian use. He pointed out that at the present time there is 22% more food per capita than before the last World War. Plans were made at the meeting for the exhibit to be held in connection with the annual meeting of the **National Canners Assn.,** Feb. 17–21, Chicago.

Speaking at the **Label Manufacturer's National Assn.** in Chicago last month, **Jim Nash** said, "Today's marketing problems require designs that provide the key to a company's entire merchandising and advertising program." Mr. Nash stressed the importance of high-voltage sales appeal in label designs and pointed

What's doing

Oct. 7–14—**International Dairy Exposition,** Indianapolis, Ind.

Oct. 10–12—**Society of Industrial Packaging & Materials Handling Engineers,** fifth annual exposition, Convention Hall, Philadelphia.

Oct. 15–17—**Small Brewers Assn.,** convention and exhibit, Edgewater Beach, Chicago.

Oct. 15–19—**National Assn. of Retail Druggists,** annual meeting, Municipal Auditorium, Long Beach, Calif.

Oct. 16–21—**Dairy Industries Exposition,** Convention Hall, Atlantic City, N. J.

Oct. 18–20—**The Society of the Plastics Industry,** annual national conference, New Ocean House, Swampscott, Mass.

Oct. 23–25—**Packaging Institute,** 12th Annual Forum, Hotel Commodore, New York.

Oct. 23–25—**Federal Wholesale Druggists' Assn.,** annual meeting, Greenbrier, White Sulphur Springs, W. Va.

Oct. 30–Nov. 2—**American Bottlers of Carbonated Beverages,** 32nd annual meeting and exposition, San Francisco.

Nov. 12–15—**National Automatic Merchandising Assn.,** Palmer House, Chicago.

Nov. 13–15—**Grocery Mfrs. of America,** convention, Waldorf-Astoria, New York.

Nov. 15–18—**National Paint, Varnish & Lacquer Assn.,** convention, San Francisco.

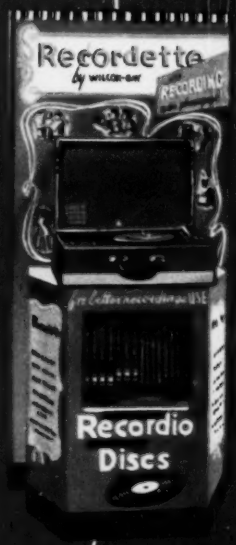
Nov. 27–29—**American Pharmaceutical Mfrs. Assn.,** Waldorf-Astoria, New York.



One call for All

River Raisin has the country's most complete display service . . . as convenient as your telephone . . . our versatile art staff creates the basic idea and the dimensional construction . . . our production experts produce the quality, finished displays—DIMENSIONAL DISPLAYS that attract attention and sell your product.





We manufacture corrugated and solid fibre shipping containers from materials produced in our own paper mills, thereby enabling us to deliver superior, colorful displays at lower costs to you.









RIVER RAISIN PAPER COMPANY

DISPLAY DIVISION • MONROE, MICHIGAN

Gentlemen:

I would like to know more about your "ONE CALL FOR ALL" Display Service.

We start launching our point of sale campaign on or about _____

We buy our point of sale on or about _____. It would be convenient for your salesman to call on us on or about _____

Company Name _____

Address _____ City _____ State _____

Telephone No. _____ Signed _____ Title _____

RIVER RAISIN PAPER COMPANY

DISPLAY DIVISION • MONROE, MICHIGAN

Searching for the perfect solution to your Packaging Paper Problem?



Look at the

MATTHIAS LINE

The very paper for which you are searching may be right in our stock.

Over 1,000 Packaging Papers to choose from.

MATTHIAS
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Are you receiving the Matthias NEWS Paper? It's packed with facts and fancy paper samples. Drop us a line, on your letterhead, and you'll be placed on our list at once.



For Your Information

(Continued)

out that the study, planning and preparation of a good package design requires specialists for the job. "The printer and the designer, working together as a team can produce effective packages that serve the manufacturer, the retailer and the ultimate consumer. Together they occupy a key position in providing the labels that make the packaging business such a potent factor in mass production, mass distribution."

The first annual **Conference and Exposition** of the **Produce Pre-Packaging Assn.** will be held at the Neil House, Columbus, Ohio, April 3–5, 1951. **Howard Ruetinik** of Orwell, Ohio, has been named general chairman of the meeting.

American Institute of Graphic Arts has announced the selection of **William H. Walling,** chairman of the board of Rogers-Kellogg-Stillson, Inc., as chairman of the committee for the 1951 Printing for Commerce Exhibition, the annual commercial printing show and competition of the Institute, which will open in New York, Jan. 29, 1951.

Plans for the **1951 National Frozen Food Industry Convention** to be held Feb. 27 to March 2, 1951, at the St. Francis Hotel in San Francisco have been announced by the **National Assn. of Frozen Food Packers.** Included among the convention arrangements were a tentative program, details concerning hotel accommodations and plans for a tour of the West leaving Chicago Feb. 23.

Discussions at the 45th annual convention of **The Lithographers National Assn., Inc.,** held in Chicago last month centered on problems arising from the partial national mobilization resulting from the Korean situation and its effect on the industry. The National Graphic Arts Exposition, also held in Chicago last month was an added attraction for many attending the convention.

Plax Corp., Hartford, Conn., has published a four-page folder illustrating and describing new applications of the unbreakable Plaxpak polyethylene bottle. It illustrates 19 products and two of the most recent stock-shaped bottles.

Various methods and the equipment used in marking products of all types and sizes are illustrated and described in a bulletin (LI-M) entitled, "An Easy Guide to Proper Marking," published by

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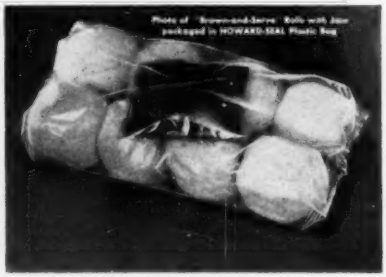
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For Your Information

(Continued)

the **Jas. H. Matthews & Co.** Copies are available from the company, 3942 Forbes St., Pittsburgh 13, Pa.

A technical data sheet (P-47) describing the uses, properties and advantages of Rez-N-Bond, a non-flammable bonding agent for cementing either acrylics or polystyrene, is available on request from **Schwartz Chemical Co., Inc.**, 326 W. 70th St., New York 23.

"Sales Promotion" (The Ronald Press Co., New York; $5) by **Alfred Gross** and **Dale Houghton** is a recently published book that analyzes the areas and techniques of sales promotion. Included in the 434-page book are various mentionings of packaging as it is related to sales promotion techniques. The book discusses the characteristics of a good package, a package's display value, packaging requirements and the value of package inserts.

Bakelite Div., Union Carbide & Carbon Corp. has published a booklet summarizing the characteristics, development and latest applications of Bakelite polyethylene, designed to acquaint the consumer and industrial fields with the new ideas and products which have been developed since the material was introduced a few years ago. Copies of the 24-page booklet are available from the company, 300 Madison Ave., New York 17.

An informative leaflet entitled, "Make More Money on the Butter You Sell," is being made available to all butter manufacturers and distributors without charge by the **Paraffined Carton Research Council.** Its object is to give retail store managers important facts about butter packaging and merchandising. The Council offers these leaflets to butter manufacturers and distributors in quantity upon receiving a statement that they will be inserted in wholesale cases of butter. Inquiries should be addressed to the Paraffined Carton Research Council, 111 W. Washington St., Chicago 2.

"Extruded Plastics," an 8-page brochure, has been issued by **Anchor Plastics Co., Inc.**, 533 Canal St., New York 13. Written especially for executives, engineers, designers and purchasing agents, the brochure explains the many forms of plastic extrusions. Photographs and sketches of components fabricated for a wide variety of industrial and consumer products help the reader visualize possible uses in his own field. A compact



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For Your Information

(Continued)

survey of the properties of the thermoplastics is also included. Copies may be had on request to the company.

Pallet Licensing Co., 795 Boylston St., Boston 16, has published an illustrated folder describing its "4-Way" pallets. The simple, graphic presentation outlines the types of pallets available, their advantages and the materials-handling operations performed through use of the 4-Way pallets. Copies of the folder may be had from the company.

"Lettering" (Prentice-Hall, Inc., New York; $6) by **Alexander Nesbitt** describes the history and technique of lettering as design. Written by a distinguished calligrapher, painter and designer, the book contains a practical course in lettering in addition to the purely historical aspect.

"Planned Packaging" (George Allen & Unwin, Ltd., Lindon; $7.50) by **Harry Jones** gives a brief history of packaging in Great Britain, the effects of World War II on British design, American wartime developments and an examination of the factors needed to design a good package. In the United States, this book is being handled through The Macmillan Co., New York.

"Symbols, Signs and Signets" (The World Publishing Co., Cleveland, Ohio; $8.50) by **Ernst Lehner** contains over 1,350 of the leading signs, seals and symbols developed by human beings during their long climb from savagery to present-day civilization. It is a practical handbook and visual guide tracing the transformation of simple identifying marks which should be of value to the artist, designer, typographer and graphic art student.

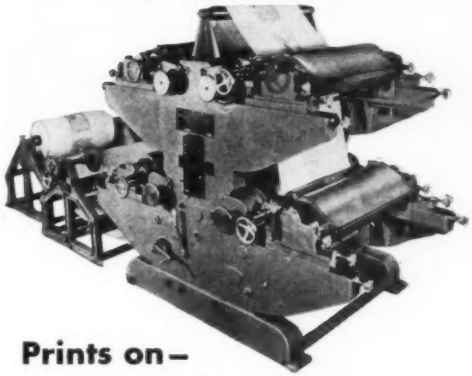
The importance of functional and decorative packing and packaging to modern industry has prompted **New York University's Division of General Education** to offer an evening program in packaging and design. It includes four courses: "Package and Product Design," "Research for Design," "Modern Packaging" and "Cost Reduction through Materials Handling."

Taffel Bros., Inc., have compiled a listing of their line of ribbons with special emphasis on special-occasion ideas in a new catalog called "Taffel Tales." Included in the compilation are: birthday, congratulations, Christmas, get-well, bon-voyage and valentine designs as well as simplified explanations of how to

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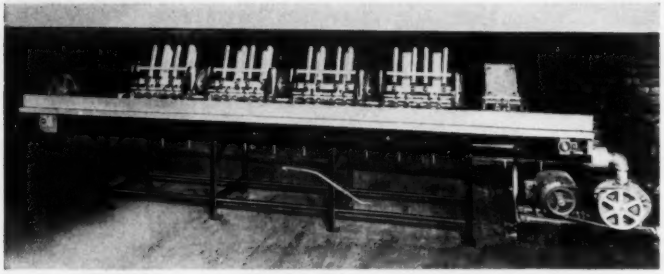
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For Your Information
(Continued)

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A subject index to technological documents issued in Volume 12 of the **Bibliography of Technical Reports** is now available to the public, the **Office of Technical Services** of the **U. S. Department of Commerce** announced. The index, costing $1 per copy, enables researchers to locate reports on any subject carried in the bibliography for the period July–Dec., 1949.

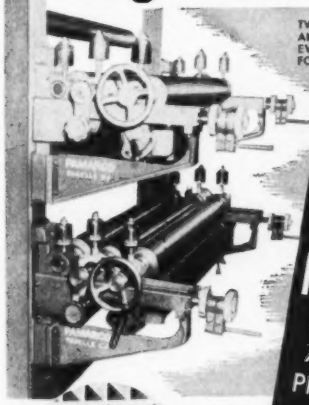
The O.T.S. also announces the availability of a comprehensive collection of reports on wood utilization. The collection, originally prepared under the joint sponsorship of the Office of Naval Research and the National Research Council, includes 24 presentations dealing with wood research by the Armed Services and covering, among other subjects, the utilization of wood for packaging. PB 101 233, **Report of Symposium on Wood**, contains 537 pages including photographs, charts, tables, etc., and costs $7.50. Orders should be addressed to the Office of Technical Services, U. S. Department of Commerce, Washington 25, D. C., accompanied by check or money order payable to the Treasurer of the United States.

"Guide to the Mails" (Suffolk Publications, Greenlawn, New York; $2) by **Roy L. Pepperburg** tells how to take advantage of the postal rules for getting mail delivered faster and at less cost. It covers all four classes of mail. Packages are discussed relative to new ideas and questions pertaining to handling.

U. S. Forest Products Laboratory, Madison, Wis., has recently released the list of its publications covering the period from January through June, 1950. Among the classifications of special interest to packagers are: Glues and Plywood, Packaging, Mechanical Properties, Pulp and Paper and Wood Preservation.

The Visking Corp., 6733 W. 65th St., Chicago, recently completed a nationwide survey of the sausage and cured-meats industry which they have summarized into a booklet and a 20-min. sound-slide film. Ten sound-slide outfits are currently touring the country showing the survey film to packers, sausage manufacturers, chain store and retailer groups. The company hopes that the information gained from the survey will help the industry widen its markets.

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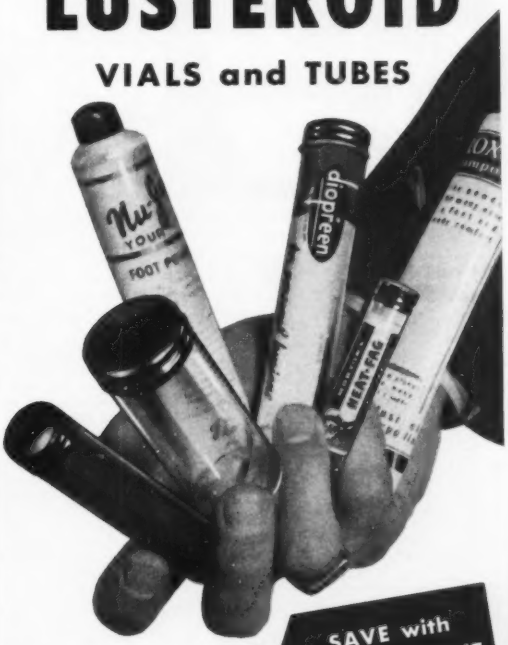
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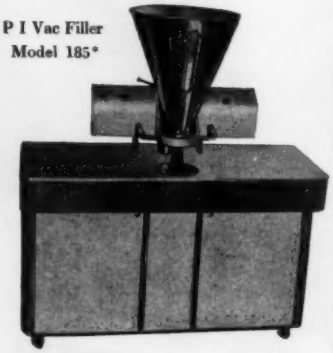
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U.S. Patents Digest

Edited by H. A. Levey

This digest includes each month the more important patents of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at 25 cents each in currency, money order or certified check; postage stamps are not accepted.

Bag-Sealing Device, C. Miller (to Consumer-Pak Machine Co., Pomona, Calif.). U. S. 2,514, 543, July 11. In an apparatus for sealing a closure member: means to support a pair of rolls of adhesive tape and to support extended lengths of said tape, lengths of tape having outer ends adhesively secured to each other at a juncture point, tape-supporting means including a pair of pressure members engaged with tape at juncture.

Box, E. J. Nugent (to California Container Corp., Emeryville, Calif.). U. S. 2,514,587, July 11. A box component of foldable material comprising a bottom, side walls and end walls, each including a folded end-wall section and means connecting the ends of side-wall adjacent edges of folded end-wall section, means including fold-in sections enclosed within folded end-wall section.

Bag-Closing Apparatus, J. E. Ashe (to California & Hawaiian Sugar Refining Corp., Ltd., San Francisco, Calif.). U. S. 2,514,620, July 11. In a bag-closing apparatus, the combination of a supporting frame having an overhanging portion under which a bag to be closed may be positioned, a vertically movable frame carried by supporting frame and having a head at its lower end for supporting bag-wall engaging elements in depending relation therewith.

Method and Apparatus for Producing a Package, S. R. Howard, M. and J. G. Vergobbi (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,514,867, July 11. In a packaging machine, means for supporting a filled container, container having an inner bag and outer container, mouth portion of bag having a top closure provided with lateral extension, and means for inserting extensions within the container walls comprising means for first folding extensions against outside of container.

Knock-Down Box, E. T. Hunter (to Material Progress Corp., Washington, D. C.). U. S. 2,515,007, July 11. A knock-down box having a solid bottom panel with cleats on its upper and lower surfaces, upper cleats being longer than the panel lower cleats interlocking with the long cleats of bottom panel and two solid side panels having inner and outer cleats at both ends which interlock with long cleats on bottom panel and overlap edges.

Carton, R. Van Rosen (to J. Makowsky Corp., a corporation of New York). U. S. 2,515,026, July 11. In a carton formed from a single sheet of material, a front wall having an aperture therein, a reinforcing member articulated to the top of front wall and overlying part of front-wall member and having a marginal slot in register with part of the aperture and a triangular right side-wall member.

Carboy Package Construction, R. W. Lahey (to American Cyanamid Co., New York, N. Y.). U. S. 2,515,127, July 11. A boxed carboy comprising a box and a bottle therein, a triangular corner post at each corner of box containing a vertical groove and a pair of cushion carriers located generally at each corner of box and spaced from corner post by means of a wedging element.

Container, W. B. Crane (to Alpak, Los Angeles, Calif.). U. S. 2,515,151, July 11. A container made from a blank of cut and scored paperboard material providing panels secured together to form collapsible side and end walls and having inner and outer walls hinged thereto.

Method of Making Knock-Down, Hinged-Lid Cartons, S. Bergstein (to Robert M. Bergstein and F. D. Bergstein, trustees). U. S. 2,515,327, July 18. A method of making knocked-down, hinged-cover cartons which comprises providing a carton blank having enclosing body walls and a glue flap, a cover top panel articulated to one of body walls and cover side walls, and a cover front wall articulated to the cover top wall, which includes moving the blank and folding portions of cover side walls on diagonal lines.

Carton-Sealing Machine, F. M. Willbrandt (to Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich.). U. S. 2,515,620, July 18. A semi-automatic folding and sealing device for closing cartons comprising a frame, flap-folding and sealing plates adjustably mounted on top of frame.

Stripping Mechanism for Carton-Forming Machines, F. M. Willbrandt (to Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich.). U. S. 2,515,621, July 18. Carton-stripping mechanism for a carton-forming machine having flights of carton-forming blocks comprising a cross member on machine extending under the path of travel of said flights.

Box-Dumping Machine, A. J. Kroner (to California Packing Corp., San Francisco, Calif.). U. S. 2,515,718, July 18. A frame, a platform mounted thereon, an entering receptacle conveyor leading to platform, a moving belt riding over platform, a guide bar on frame whereby receptacles are caused to ride on platform and belt unstably, a stabilizing member on frame at the entering end of platform and level therewith and a drive V-belt adapted to coact with the top of a dumped receptacle falling from platform and landing on landing bar.

Apparatus for Packing Materials, T. M. Reimers (to Standard Cap & Seal Corp.,

Chicago, Ill.). U. S. 2,515,838, July 18. An apparatus for closing containers including a frame, a magazine having a plurality of supported sections arranged in fixed relationship and supported upon a rotatable shaft for movement about a horizontal axis, each of magazine sections being formed with a plurality of chambers adapted to receive and accommodate containers to be closed.

Carton, W. P. Frankenstein, Cincinnati, Ohio. U. S. 2,514,384, July 11. In a carton formed from a single blank with a base member, side walls at opposite sides of the base, each inwardly spaced from its base side and including an outer-wall member and an inner-wall member, and having a glue flap for hingedly securing inner-wall member to base.

Container, M. I. Williamson (to National Folding Box Co., Inc., a corporation of Connecticut). U. S. 2,516,085, July 18. A carton having end flaps hingedly connected to side walls of carton along end score lines, a web-forming member inside the side walls extending beyond end score lines over a marginal portion of end flaps adjacent hinge lines, said member forming sealing webs at corners upon folding.

Parcel Bag, W. Simpson (to Cohoes Envelope Co., Inc., Cohoes, N. Y.). U. S. 2,516,266, July 25. A parcel bag comprising front and back walls joined together to provide a closed-bottom, open-mouth container, a closure flap at upper edge of back wall adapted to be folded over upper edge of front wall to close bag mouth, and equipped with handle.

Capping Machine, H. G. Vore (to American Seal-Kap Corp. of Delaware, Wilmington, Del.). U. S. 2,516,278, July 25. In a machine for applying to containers and heat sealing thereon, preformed hood caps having foldable pleated skirts carrying a thermoplastic adhesive coating and having a dielectric character, the combination which comprises means for advancing caps in succession along a path to a cap-applying station.

Method and Apparatus for Forming Cartons, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,516,624, July 25. The method of forming a carton having a bottom panel with side-wall panels foldably connected thereto and locking panels on certain of said side-wall panels designed to engage in slot in next adjacent panel. A carton-forming apparatus for use in conjunction with a carton having a substantially rectangular bottom panel and foldable side walls.

Method of and Mechanism for Applying Stamps, A. J. Matter (to American Decalcomania Co., Inc., Chicago, Ill.). U. S. 2,516,783, July 25. In an apparatus for applying stamps to an array of packages held by a jacket open at one edge to expose said packages, conveyor means to propel said packages in step-by-step forward movement corresponding to the center-to-center spacing of said packages in the direction of movement.

Lined Carton, J. W. Wilson (to The Interstate Folding Box Co., Middletown, Ohio). U. S. 2,516,820, July 25. A carton having enclosing body wall in flat tubular form in combination with a flat tubular liner having a portion projecting beyond ends of body walls, liner adhered to body walls so as to be erected when the carton is erected.

Folded-In Bag Valve with Sleeve Insert, N. E. Weeks (to Bemis Bro. Bag

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New, Winter Wonderland of Opportunity

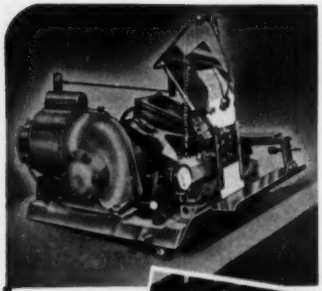
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Address .....

City ..... State .....

U.S. Patents Digest

(Continued)

Co., St. Louis, Mo.). U. S. 2,517,068, Aug. 1. A valved bag comprising a straight-cut mouth having a folded-in valve flap extended into said mouth, said flap having inside and outside faces, and an inward marginal edge which is continuous with the straight-cut mouth portion, a single-ply valve sleeve comprising a sheet of flexible material adhesively attached adjacent one of its ends to one of said faces and adjacent to inside margin.

Carton, F. R. Buhrmaster (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,517,080, Aug. 1. A carton comprising an end wall and side walls having end flanges overlapping the outer face of end wall, end wall having a panel that is folded downwardly from upper edge of end wall along outer face thereof between opposing edges of end flanges and secured thereto.

Collar-Can Collar, J. Henchert (to Continental Can Co., Inc., New York, N. Y.). U. S. 2,517,310, Aug. 1. A collar-can collar comprising a metal strip formed into collar shape with its end equipped with return bends providing hooks interlocked in the form of a seam.

Machine for Vacuumizing and Closing Filled Oblong Cans, A. L. Kronquest (to Continental Can Co., Inc., New York N. Y.). U. S. 2,517,323, Aug. 1. In a can-vacuumizing and closing machine, a frame, a plate supported in horizontal position on frame, a peripherally pocketed turret mounted uprightly on frame and extending beneath plate, plate having an upstanding centering boss and a can passing opening therein and a sealing gasket surrounding boss.

Carton-Blank Folding Machine, A. F. Shields (S. & S. Corrugated Paper Machinery Co., Inc., Brooklyn, N. Y.). U. S. 2,517,449, Aug. 1. In a folding machine for forming flat, collapsed, tubular box blanks from flat and scored sheets, sheets having a pair of longitudinally extending side sections defined by score lines and foldable into collapsed arrangement, means for folding and moving blanks.

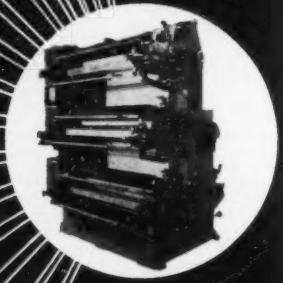
Molded-Pulp Carton, J. W. Cox (to Shellmar Products Corp., Mt. Vernon, Ohio). U. S. 2,517,465, Aug. 1. A cellular egg carton comprising generally rectangular-molded fibrous top and bottom sections, having pairs of end and side walls and being hinged to one another.

Multiple Container, C. V. Johnston, Backus, Minn. (one-half to J. E. Hill and N. B. Hill, copartners doing business as J. E. Hill & Co.). U. S. 2,517,492, Aug. 1. A container comprising a solid frame having a recess in one side thereof for accommodating a container body; a cellulose, molded, integrally formed container body constructed in the manner of a honeycomb with a plurality of individual, cup-shaped cells open at their outer ends.

Container, J. M. Field (to Deering, Milliken & Co., Inc., New York, N. Y.). U. S. 2,517,552. Aug. 8. An integral blank of foldable material forming a carton hexagonal in cross section which

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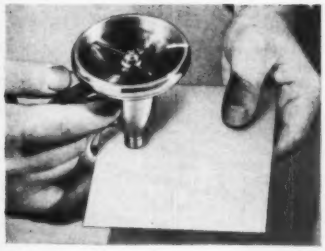
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U.S. Patents Digest

(Continued)

comprises a body portion having a first terminal rectangular section, a second rectangular section adjacent thereto, a third rectangular section adjacent to the second, a fourth and fifth section all having connecting strip integrally attached to one of terminal sections and adapted for adhesive attachment to the other of said terminal sections.

Liquid Filling Machine, R. E. J. Nordquist (to American Can Co., New York, N. Y.). U. S. 2,517,592, Aug. 8. In a machine for filling liquids into containers of different heights, the combination of a rotatable sleeve, a normally stationary table movable vertically to accommodate containers of different heights, a hub slidably mounted on sleeve and rotatably carried on table.

Ampoule with Breakable Neck, W. F. Smith (to Owens-Illinois Glass Co., a corporation of Ohio). U. S. 2,517,604, Aug. 8. A glass container having a relatively small localized area coated with a solidified fusible material, said coating material being fused to the glass of the container to form a strong bond.

Apparatus for Dielectric Heat-Sealing of Thermoplastic Materials, W. L. Jenkins (to B. F. Goodrich Co., New York, N. Y.). U. S. 2,517,672, Aug. 8. An apparatus for the dielectric heat sealing of thermoplastic material, said apparatus comprising a pair of rotatable wheel-like electrodes having their peripheral surfaces opposed, each of said electrodes comprising disks of hard dielectric material disposed on both sides of a central metallic disk axially adjacent thereto to provide a laminar structure and means for supplying a high-frequency alternating field to the metallic portion of said electrodes.

Shipping and Display Box, R. J. Cody (to Federal-Mogul Corp., Detroit, Mich.). U. S. 2,517,787, Aug. 8. A shipping, storage and display carton comprising a box and a separate partition unit within said box, said partition unit provided with a generally rectangular bottom having opposite longitudinal edges, side walls integrally connected to bottom along fold lines, side walls being arranged transversely opposite each other and extending from one end of bottom along longitudinal edges thereof for approximately one fourth of length of edges.

Label-Feeding Mechanism, W. Hoppe (to National Bread Wrapping Machine Co., Springfield, Mass.). U. S. 2,518,011, Aug. 8. A web-feeding and severing device for webs having regularly spaced marginal indentations, which web is to be severed at said indentations, comprising a knife-carrying roll having a knife, means to drive said roll, said roll being provided with relatively narrow, circumferentially extending marginal feeding portions.

Carton-Folding Machine, W. H. Inman (to Bloomer Bros. Co., Newark, N. Y.). U. S. 2,518,014, Aug. 8. A machine for folding a blank to form a fluid-tight carton, said machine comprising a support for carton bottom, wings mounted to swing at opposite sides for folding the walls and

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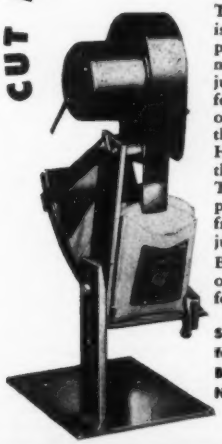
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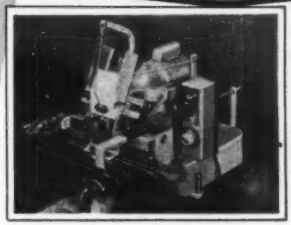
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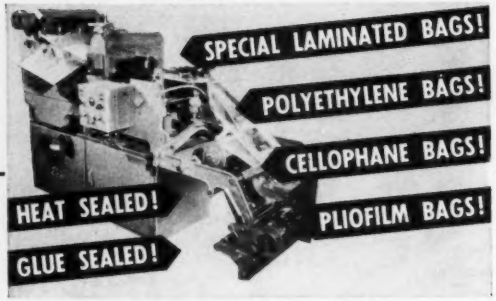
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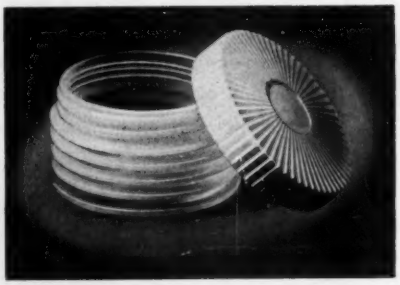
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U.S. Patents Digest

(Continued)

corner flaps outwardly and for moving flaps into interlocking engagement with each other.

Apparatus for Winding Tubes, W. R. Scherer (to Taylor Fibre Co., Norristown, Pa.). U. S. 2,518,075, Aug. 8. Means for winding tubes from strip material comprising a pair of mandrel-supporting rolls, a mandrel on which the tube is to be wound, means to rotate the mandrel while positioned on both rolls.

Container-Closing Apparatus, S. W. Dennis and E. Henschen (to Crown Cork & Seal Co., Inc., Baltimore, Md.). U. S. 2,518,294, Aug. 8. In a closure-applying apparatus comprising a member providing a vertical opening of a size to pass closures of certain diameter and recesses in the top of said member around opening for the reception of oscillatory closure-feeding fingers.

Display Carton, R. J. Hennessey (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,518,779, Aug. 15. A display carton including a bottom panel, a front-wall panel, and a relatively high rear-wall panel, tapered side-wall panels on bottom panel and a vertical support panel having an upwardly sloping edge extending between front and rear walls with strip foldably connected to front.

Carrier, W. A. Ringler (to The Gardner Board & Carton Co., a corporation of Ohio). U. S. 2,518,818, Aug. 15. A collapsible paperboard carrier structure comprising a permanently closed portion for surrounding articles in said carrier, having an outer end wall, outer side wall, outer end wall and outer side wall in articulation in the order named, median score line in outer end walls, extension from the top edges of side walls only, each of extensions scored to form an inner side-wall portion of the same depth as the side walls and articulated thereto.

Method and Apparatus for Sealing Containers, W. D. Bell (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,518,856, Aug. 15. The method of continuously sealing caps on containers which comprises moving the containers continuously and providing a jet of flame with insufficient air for complete combustion so that it is in the form of an envelope of burning gases.

Apparatus for Sealing Containers, W. D. Bell (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,518,857, Aug. 15. Apparatus for closing and sealing containers comprising an inclined cap chute for feeding caps successively into position at the lower end of the chute to be engaged by the upper ends of containers moved successively into association therewith.

Machine for Folding Box Blanks and the Like, F. H. Chapman (to The International Paper Box Machine Co., Nashua, N. H.). U. S. 2,519,111, Aug. 15. A machine for folding a tab upon a diagonally creased line of a side blank continuously traveling along a paper line comprising means for raising said side above the paper line.

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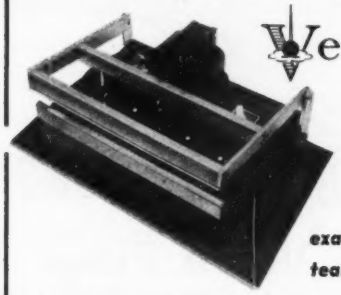
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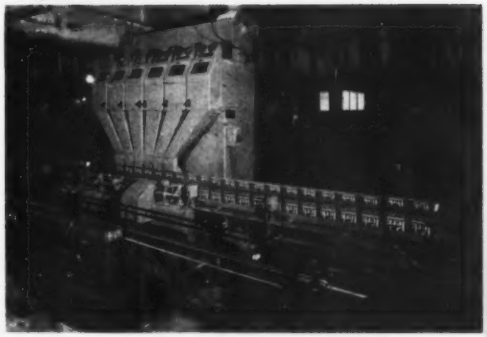
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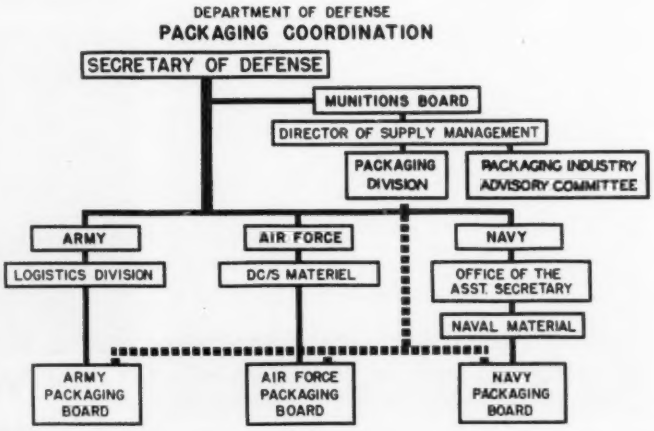
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Also reporting to the Director of Supply Management (Rear Admiral Morton L. Ring) is the newest link in the organization—the Packaging Industry Advisory Committee, which was formed last March of civilian members for the purpose of coordination with industry. Chairman of this committee is Neil A. Fowler, director of sales and research, General Box Co., Chicago, assisted by 17 representatives of packaging suppliers and users.

The Munitions Board, with Hubert Howard as chairman and Maj. Gen. P. W. Timberlake as director of staff, has power to make recommendations to all divisions of the military packaging set-up. Directly under the Munitions Board, Admiral Ring, as director of supply management, oversees the work of the board's Packaging Division and receives recommendations of the Packaging Industry Advisory Committee. Head of the Packaging Divi-



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sion is Col. John A. Way, USAF. Executive secretary is Ross B. Brandon. Contact points of the three military departments for the Packaging Division are the chairmen of the Army, Air Force and Navy Packaging Boards, with their vice chairmen as alternates.

Chairman of the Army Packaging Board is E. F. Atley, with T. P. Wharton as vice chairman. This board covers the activities of the Ordnance (Capt. H. G. Cherry), Engineers (V. P. Giddings, Jr.), Quartermaster (Albert V. Grundy), Signal Corps (Capt. Robert A. Starr), Supply (H.M. Lovelace), Chemical (T. P. Steinmetz), Medical (B. R. Smith) and Transportation (D. N. Bullock) divisions.

Chairman of the Air Force Packaging Board is Maj. Stanley C. Birkhold, with Capt. L. M. Young as vice chairman. Divisions under this board are: Supply (Capt. R. D. Lee), MATS (Maj. G. H. Dempsey), Transportation (George R. McQuaid), Inspection (James W. Conklin), Engineering (William D. Long), Maintenance (R. H. Eckhart), Procurement (Maj. D. H. Curran) and Planning (G. L. Harding).

Chairman of the Navy Packaging Board is Lt. Com. R. Doughton, Jr., with Clinton K. Royce as vice chairman. The divisions are: Marine Corps (Col. Ion M. Bethel), Ships (A. L. Van Emden), Supplies & Accounts (H. E. Rodenbaugh, Jr.), Ordnance (H. T. Decot), Medicine (Lt. L. K. Thompson), Aeronautics (F. P. Somers) and Yards & Docks (C. A. Lewis).

The new Packaging Industry Advisory Committee, according to member spokesmen, will not displace any of the work on specifications now going on in the Government nor in trade associations and technical societies. Specific projects which the committee might undertake, according to Government releases, include making recommendations with regard to the simplification of specifications, development of solutions to problems encountered in packaging specific commodities, preservation of various materials and containers, container handling practices, review of areas in which specifications are lacking, maintenance of liaison between industry and the Department of Defense in the development of new materials to meet strategic requirements and promotion of joint military-industry packaging training programs.

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Museum pieces

(*Article continued from page 103*) the company to go ahead with plans for national distribution. Selling will be through department stores and the better types of drug stores.

Credits: *Design, Gordon Aymar, New York. Eagle flask bottle, Kimble Glass Co., Div. of Owens-Illinois Glass Co., Toledo, Ohio. Hair dress and deodorant bottles, Carr-Lowrey Glass Co., Baltimore, Md. Metal closures, Bridgeport Metal Goods Mfg. Co., Bridgeport, Conn. Porringer and caster powder shaker, R. Wallace & Sons Mfg. Co., Wallingford, Conn. Ivory chess box, Douglas Young, Inc., Pawtucket, R. I. Cylinder box, Cross Paper Products Co., New York. Printing of box coverings, C. H. Forsman Co., New York. Tie-on labels, The Foxon Co., Providence, R. I.*

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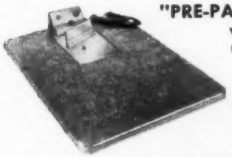
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Farewell to Frankie

(*Article continued from page 125*)
tation of a merit award by the American Society of Industrial Engineers—the only brewery ever to receive this award. The displacement of the water feature might be questionable, but the value of making the most of the award was self-evident, so the neck label was put to work in this direction.

Comparison of old and new neck labels also emphasizes the importance of simplicity in label design. Again the black background is used to emphasize the yellow medallion carrying an illustration of the merit award.

Continuous design had previously been quite inadequate on the canned beer. This may have been because no active promotion of Frankenmuth beer and ale in cans was in operation, or it might have been due to inadequate planning. In any case, the designs were radically different from the bottled product. Since a new design was being worked out on the bottle, can designs were also changed.

The oval design has been made the same for the cans except for the area. The oval is slightly larger and the black background has been increased to cover practically the entire can to duplicate as closely as possible the effect of the bottle label against its dark bottle background.

With the development of the can, the new management at Frankenmuth decided to take advantage of the growing demand for carry-home cartons which have proved so advantageous in building residential trade. The result is a Frankenmuth "Take Home 6 Pak" which is both convenient and an excellent display device for grocery and package stores. The self-handle folds over the can tops for easy stacking.

All of the changes in design took a great deal of doing. As someone at the brewery has remarked, "It was a dog's job, but thank goodness the dog's gone for the good of the business!"

CREDITS: *Bottles, Ball Bros. Co., Muncie, Ind.; Brockway Glass Co., Inc., Brockway, Pa.; Thatcher Glass Mfg. Co., Elmira, N. Y. Labels, National Lithograph Co., Detroit, Mich. Cans, American Can Co., New York. Carry-home cartons, Morris Paper Mills, Chicago. Back-bar display, J. Ray Moore, Detroit. Shipping cartons for cans, Monroe Paper Products, Monroe, Mich. Shipping cartons for bottles, Consolidated Paper Co., Monroe, Mich.*

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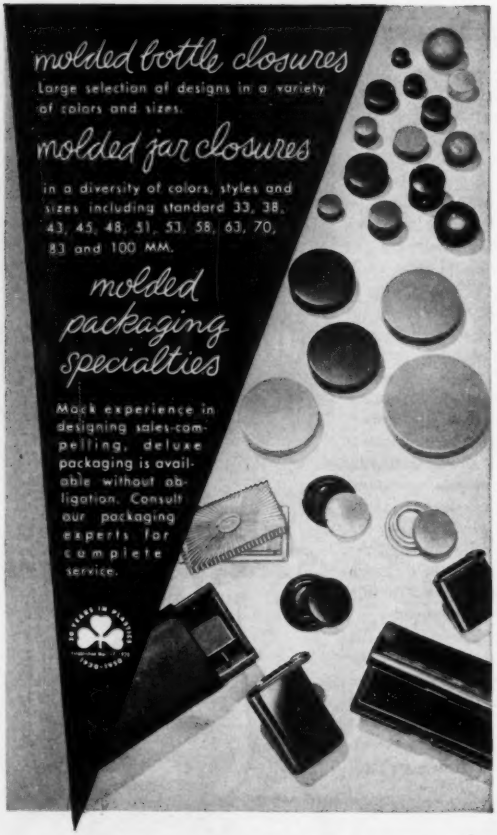


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HYDRAULIC ANILINE PRINTING PRESSES. Engineering data, specifications, features, illustrations, etc., of the various Wolverine Hydro-Printer models. Wolverine Paper Converting Machinery Corp. (10-51)

EMBOSSING EQUIPMENT. Complete information concerning the Master hydraulic embossing machine with engraved matched hardened steel rolls. Also, information concerning precision engraved applicator rolls. Modern Engraving & Machine Co. (10-52)

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FILLERS. Detailed discussion of the Horix fully automatic rotary fillers for still liquids and semi-liquids. Illustrated. 4 pages. Horix Manufacturing Co. (10-55)

SEALERS. Details on the Amsco "Little Giant" rotary bag sealing machine and the new Amsco hand sealer for polyethylene. Includes prices and illustrations. Amsco Packaging Machinery, Inc. (10-56)

PNEUMATIC TUBE SYSTEMS. Tube and carrier systems for speeding intra-office and intra-plant transmission of written messages, orders, small parts, etc. 8 illustrated pages. Standard Conveyor Co. (10-57)

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PACKAGING WITH FOLDING CARTONS. An authoritative review of many paperboard packages and the automatic machines that make, fill and seal them. Explains several recently improved installations. Robert Gair Co., Inc. (10-63)

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COATED PAPERS. Sample book giving detailed information about Oxford's most widely used coated book papers, together with a listing of distributors. Oxford Paper Co. (10-73)

CAST COATED PAPER. Included are samples and a discussion of the uses of Kromekote Colorcast—an entirely new development in the Kromekote line of cast coated papers. The Champion Paper and Fibre Co. (10-74)

POLYAMIDE RESIN SUSPENSOIDS. Uses as adhesives, protective and decorative coatings, and heat seal coatings, plus description of grades, properties and compounding methods. 12 page technical bulletin. General Mills, Inc. (10-75)

PRESSURE-SENSITIVE LABELS. Information on Kum-Klean labels—their advantages, features and the automatic dispenser designed for use with them. Avery Adhesive Label Corp. (10-76)

CELLOPHANE IN THE TEXTILE INDUSTRY. Included is information on the development of Cellophane cellulose film, and its uses in wrapping and sealing textile merchandise. 24 pages. British Cellophane Limited. (10-77)

POLYETHYLENE FILM. Four page bulletin describing the characteristics of Howard Seal polyethylene film. Suggests many possible applications. Howard Plastics. (10-78)

METALAM PACKAGING MATERIAL. Ten page brochure describes a laminated combination of foil, film, coating and other materials. Shows its use in the packaging field and presents actual samples. The Dobeckmun Co. (10-79)

CONTAINERS

VIALS. Folder contains information about Kimble Glass shell, dropper, applicator, screw cap, patent lip and screw cap capsule vials, with illustrations and specifications. Kimble Glass, Div. of Owens-Illinois Glass Co. (10-80)

VISITAINERS. Illustrations and features of Visitainer transparent boxes are given in this 4-page brochure. Old Dominion Box Co., Inc. (10-81)

STOCK PLASTIC BOXES. Catalog sheet giving size, weight, and other important information on stock plastic boxes with various arrangements of compartments within them. Vichek Tool Co. (10-82)

DECORATIVE TINS. Illustrations, dimensions, prices, etc., are given in this catalog on decorative tins for packaging fruit cake, candy, nuts, cookies, cheese assortments, etc. 8 pages. Weinman Brothers, Inc. (10-83)

MISCELLANEOUS

CELLOPHANE FOR SELF-SERVICE MEATS. Booklet includes fifty detailed suggestions on physical layout of packaging facilities to achieve maximum efficiency in meat processing, packaging and display. Sylvania Division, American Viscose Corp. (10-84)

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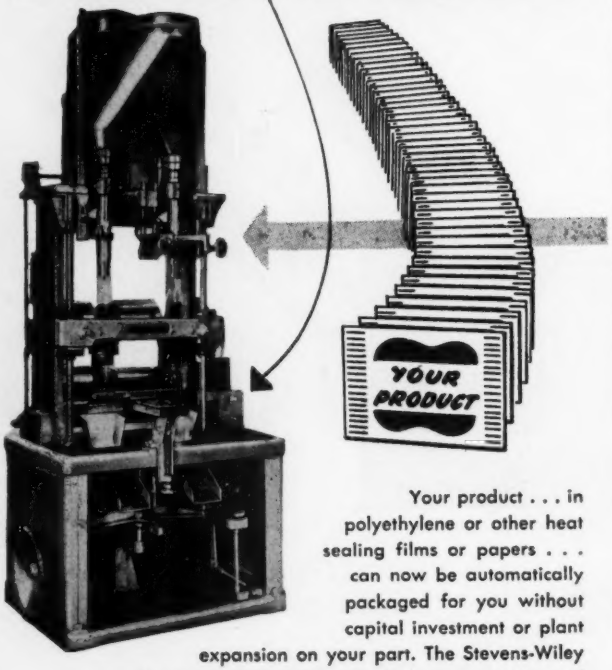
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THE STEVENS-WILEY MFG. CO., inc.
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PHILADELPHIA 32, PENNSYLVANIA

Gifted towels

(*Article continued from page 119*)
of pale green, deep copper and soft gold.

There is very little printing—just "gift towels by Martex" for identification. In one instance, however, a large, highly stylized floral design appears on the cover. Box silhouettes are square and shallow, or long and low, suited to hold towels, the company says.

Novelties are two cube-shaped or "block" boxes, derived from children's block sets, carrying a different letter on each of the six sides. Arranged to spell Martex, these can be effectively used for display. The "block" boxes are also foil covered and colorfully printed.

The planning of the Martex gift packages began almost a year ago and was based on a survey to determine the types of packages stores wanted. Although well suited to Christmas display due to the brilliance of their foil coverings, the new gift-package series was given flexibility attuned to year-around selling, according to the company.

CREDITS (according to photo numbers): *1. Embossed foil labels, F. E. Mason & Sons, Batavia, N. Y.; wrap, Addison Lithographing Corp., Rochester, N. Y.; set-up box, High Point Paper Box Co., High Point, N. C. 2. Printing and embossing of wrap, Downey & Associates, Woodbridge, Conn.; hinged oval box, Old Dominion Box Co., Inc., Charlotte. N. C. 3. Transparent acetate box, Warner Bros. Co., Bridgeport, Conn., using Monsanto Vuepak acetate. 4. Rayon acetate box covering, Facile Corp., New York, printed and embossed by Downey & Associates; set-up box, High Point Box Co. 5 and 6. Folding boxes, Container Corp. of America, Chicago; laminated foil for florist box, Matthias Paper Corp., Philadelphia. 7. Foil box wrap, The Marvellum Co., Holyoke, Mass.; hinged box, High Point Paper Box Co. 8 to 11. Silk-screen-printing foil wraps, Aldus Printers, Inc., New York; set-up boxes, Old Domain Box Co., Inc.; design consultants, Alfred Auerbach Associates, New York.*

CORRECTION—The article "Sampling Ideas," p. 142, July issue, erroneously implied that the Liquifoil Packaging Co., Los Angeles, had been set up by Cardinal Laboratories as an affiliate. Actually, the Liquifoil Packaging Co. is an independent company, specializing in the contract packaging of liquid products in foil-film laminations.

Waste-paper drive

An advertising and publicity program designed to stimulate the flow of waste paper to consuming mills has been undertaken by the Public Relations Committee of the Midwest Consumers of Waste Paper, St. Louis, Mo., as one method of meeting the need for this raw material, according to Frank Block, director of the committee.

Schools, churches, scouts and civic groups are being urged in an advertising campaign in 51 newspapers in 25 Midwestern cities with 100,000 or more population, to earn money by collecting and selling waste paper. The committee's field staff is working closely with waste paper dealers in smaller cities in getting war-time collection organizations reactivated. Field representatives of the committee have contacted dealers and drive sponsors in 216 communities in Minnesota, Iowa, Missouri, Kentucky, Illinois, Wisconsin, Michigan, Indiana and Ohio. Consumers of waste paper in the Midwest contribute to a fund for this waste-paper program.

Wrigley's—

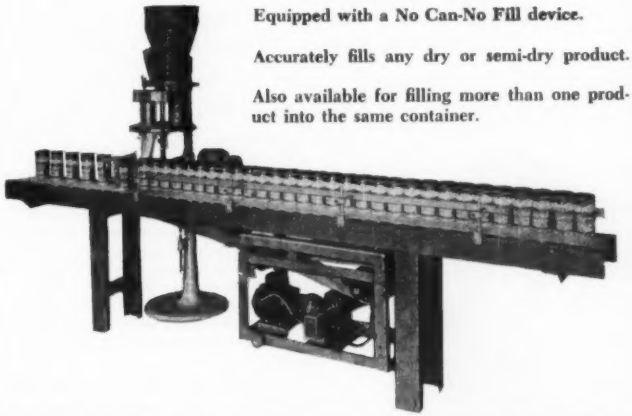
(*Article continued from page 110*)
spective brands. Distribution of the 18-stick packages is being gradually broadened and the unit is currently available in a number of major trade areas throughout the U. S. A recent development is the embossing of the brand name on the individual-stick foil wraps to maintain the Wrigley's trade-name identity when the individual stick is withdrawn from its printed sleeve wrapper.

Good display and hard-hitting advertising by the Wrigley company recognize the fact that chewing gum is usually bought on impulse rather than as a planned purchase. Although many have the impression that the company is among the nation's half-dozen largest users of advertising, actually there are scores of firms with larger advertising budgets. Principal media used include car cards, outdoor billboards, radio and small-space newspaper advertisements. In addition, television has been used experimentally.

The distinctive poster style used by Otis Shepard, Wrigley's art director, has long dominated the company's billboard and car-card campaigns. Each Wrigley brand is advertised on

NOW - AN AUTOMATIC VIBRATORY FILLMASTER FOR CONTINUOUS, UNBROKEN, HIGH PRODUCTION

Make 1 Fillmaster filler do the work of 2—with only 1 operator. Adjustable for rigid containers of any size and shape.



Equipped with a No Can-No Fill device.

Accurately fills any dry or semi-dry product.

Also available for filling more than one product into the same container.

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Now you can buy the PERFECT glue . . . engineered to meet *your* specific needs!

Our experienced Chemical Engineers study your operations and analyze your requiremnts. Then they prescribe the EXACT adhesive to do the job, and test it on your equipment and materials.

Corn Belt's "Engineered Adhesives" save thousands of dollars for hundreds of satisfied customers. May we prove that this extra service means extra profits for YOU?

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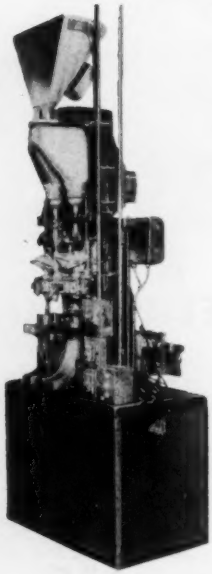
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MODEL A AUGER SHOWN—ideal for contract packaging. Output 60 to 150 per min.—5 cu. in. to 20 cu. in.; 1¼" x 1½" to 2⅜" x 6½". Feeds by auger-type screw, from hopper reservoir. Pillow-type package, with or without gusset—all heat-sealing materials. Equipped with photo-electric control. 4' x 4' x 8'; wght. 1951 lbs.; 2-½ HP motors, total load, 1582 w.

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an individual basis and package close-ups are usually prominently featured.

In the interests of continued product and packaging improvement, the company in 1949 expanded its research facilities and set up a new laboratory in a separate building, where scientists conduct a broad experimental research program. Here fundamental studies are under way to find out, among other things, just how chewing-gum bases differ in molecular structure as well as in various physical characteristics. One piece of equipment used is a staff-designed "chewometer" which determines with mechanical precision the "opposition to bite" of various chewing gums. The laboratory also has a pilot plant with miniature processing equipment matching that of the main plant.

Packaging receives its share of attention in the new laboratory. For example, gum wrappers are checked periodically with a spectrophotometer to insure uniformity of color values on label shipments. This touch of characteristic thoroughness makes certain that the familiar Wrigley wrappers will always look their best on the nation's retail counters.

CREDITS: **Single sticks**—*Aluminum foil for inner wrap, Reynolds Metals Co., Richmond, Va. Light-weight tissue, Port Huron Sulphite & Paper Co., Port Huron, Mich., and Central Waxed Paper Co., Chicago. Labels, Multi-Colortype Co., Cincinnati, and United States Printing & Lithograph Co., Cincinnati.* **Five-stick packages**—*Printed cellophane, Shellmar Products Corp., Mt. Vernon, Ohio, and Forbes Lithograph Mfg. Co., Boston. Lamination of cellophane to waxed paper, Central Waxed Paper Co., Chicago; Port Huron Sulphite & Paper Co. and Marathon Corp., Menasha, Wis. Aluminum foil, Reynolds Metals Co., and Johnston Foil Mfg. Co., St. Louis, Mo.* **Twenty-package boxes**—*Cornell Wood Products Co., Milwaukee; American Coating Mills, Div. of Owens-Illinois Glass Co., Toledo, Ohio, and United States Printing & Lithograph Co. Cellophane for box wrap, E. I. du Pont de Nemours & Co., Wilmington, Del.* **Shipping cases**—*Cornell Wood Products Co.; Atlas Boxmakers, Inc., Chicago, and Waldorf Paper Products Co., St. Paul, Minn.* **Equipment**—*Machines for setting up 20-package display cartons designed and manufactured by Frank D. Palmer Co., Div. of Package Machinery Co., East Longmeadow, Mass. Wrapping machines for display cartons, Battle Creek Bread Wrapping Machine Co., Battle Creek, Mich. Case-sealing machines, Standard-Knapp, Div. Hartford-Empire Co., N. Y.*

Adhesives for laminations

(*Article continued from page 151*)
films (which contribute strength, flexibility, plus impermeability to various materials), the resultant lamination not only has excellent eye appeal, but also provides many kinds of protection for the commodity it is used to package.

Combinations of this particular type have been used in the packaging of dehydrated soups.

General recommendations

To attempt to go into detail about the particular adhesives suggested or recommended for laminating the many films to themselves or to other materials is beyond the scope of this article. A few general comments should suffice.

Emulsions, lacquers and hot melts may be used for adhering films to plain paper. Emulsions are preferred because they are easier to handle; they may be diluted with water; they are easier to clean from machines; in most cases no drying tunnel is necessary; no complicated heating of glue pots and application rollers is required; and objectionable fumes or solvent vapors are minimized.

For adhering films to inked papers (inexpensive book covers, labels, etc.), lacquers give best results. Emulsions may be employed on some of the more easily adhered inked surfaces; but on the difficult ones—especially where the ink contains oxidizing oils—lacquers give better adhesion.

The usual technique is to apply the lacquer to the film to avoid running the ink on the paper, to dry partially in the tunnel to remove most of the solvent and then to combine the film and paper with nip-roller pressure. There is enough residual solvent in the adhesive coating to act on the ink and insure good adhesion without running the ink.

Both lacquers and hot melts are in commercial use for laminating film to film or film to foil. Higher production speeds are possible with hot melts because no solvent-removal stage is required. However, many machines are not equipped with heated pots and rollers and in such cases lacquers are necessary.

There are many precautions to be observed in the handling and use of the various laminating adhesives. Since this information is of primary interest only to those actually using such products, it will not be discussed here. The adhesive manufacturer can supply complete instructions.

Summary

Ordinary paper lamination and film-and-foil laminations require different types of adhesives because of (1) basic structural differences, (2) the comparative insolubility of cellulose as compared to many synthetic polymeric sheetings, (3) the permeability of paper versus the impermeability of films and foils and (4) the different end-use requirements of paper laminations compared to film-and-foil laminations.

The adhesives used on most film or foil laminations are of the emulsion, lacquer or hot-melt type. A selection will depend primarily on which will give the best lamination and secondarily on available equipment and ease of handling.

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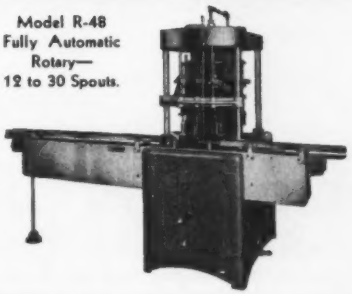
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Folding box uses

Significant information on the distribution of folding boxes among the various packaging industries is disclosed by an end-use product classification breakdown just issued by the Folding Paper Box Assn. of America—the first such report to be compiled by this association since the end of World War II.

The survey of the box industry, covering the period of January through July, 1950, shows food products (not including candy and baked goods) to be the largest single user of the folding boxes, accounting for 22.89% of dollar sales and 22.39% of the industry's tonnage.

Surprisingly, Army and Navy uses were at the very bottom of the list, taking only 0.133% of dollar sales volume and 0.063% of the total tonnage consumed.

The soap industry was the second largest user tonnagewise (12.918%), although it fell slightly behind crackers and baked goods in dollar purchases, 10.4% against 10.425% for the latter category.

The complete breakdown, with rank shown according to percentage of dollar sales, follows:

Rank	*% dollar sales*	*% tons*
1. Food (not including candy and baked goods	22.89	22.397
2. Crackers and baked goods	10.425	11.509
3. Soap	10.4	12.918
4. Hardware, appliances & automotive supplies	6.72	5.18
5. Candy & confectionery	6.492	6.081
6. Medicinal products	6.275	4.357
7. Retail boxes	6.046	6.281
8. Tobacco & related products	5.347	6.825
9. Cosmetics & personal accessories	5.154	3.855
10. Beverages	3.608	3.689
11. Paper goods or products	3.374	4.049
12. Textiles & apparel	3.163	3.449
13. Rubber goods	1.640	1.443
14. Sporting goods and toys	1.444	1.352
15. Laundry boxes	0.615	1.076
16. Army & Navy Miscellaneous	0.133 6.274	0.063 5.476

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British testing techniques

(*Article continued from page 153*)

5. The jar or jars broken were quite randomly situated in the box and presumably the weaker jar of the two meeting broke.

6. The type of damage was identical with that seen on visiting the firm's works.

As a result of the test, modifications were made to the internal partitions and experimental boxes were produced which had an average breakage height of 27 in. It was suggested that these modifications should be incorporated and later the firm submitted two new types of pack made commercially, which were tested and found to have a minimum breakage height of 27 in. (see Fig. 5).

Since these new boxes have been used, no further trouble has been experienced by the manufacturer of the product with this pack.

Pack for glass jars

Two 3-lb. glass jars of a food product were packed in a corrugated fibreboard case and considerable breakage occurred when the packs were sent by post.

We were asked to test this package and suggest improvements.

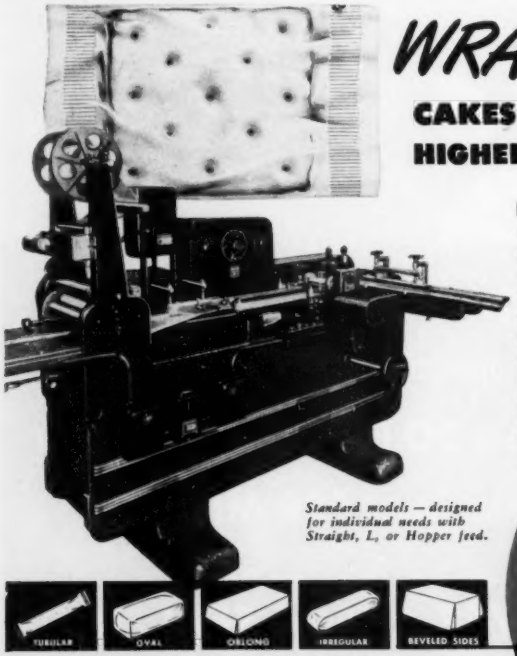
First of all, the shape of the pack and its contents led us to use the drop test in the following sequence:

Drop number	*Dropped on to concrete floor to fall on:*
1	Base
2	Base edge
3	Shorter base edge
4	Base corner at taped joint
5	Another base corner
6	Larger side face
7	Smaller side face
8	Taped side edge
9	Another side edge
10	Top
11	Longer top edge
12	Shorter top edge
13	Top corner at taped joint
14	Another top corner.

A pack was dropped through this sequence from a height of 1 ft. and

TABLE IV

No. of pack	*Total weight (lbs.)*	*Height of drop (ft.)*	*No. of drops to break jar*	*Position of fall causing breakage*
Unmodified packs				
1	12 1/2	4	2	Longer base edge
2	12 1/2	4	2	Longer base edge
3	12 1/2	3	25	Longer top edge
4	12 1/2	3	3	Shorter base edge
Modified packs				
1	12 1/2	3	112 drops, not broken	
2	12 1/2	4	8	Smaller side face
3	12 3/4	4	2	Longer base edge



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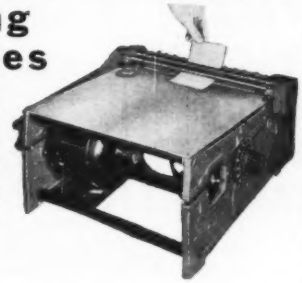
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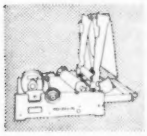
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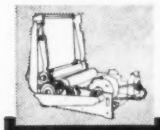
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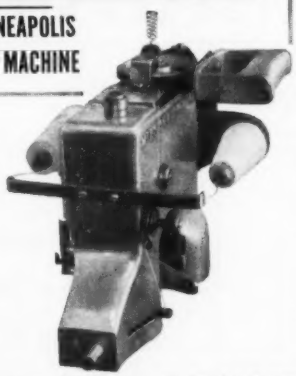
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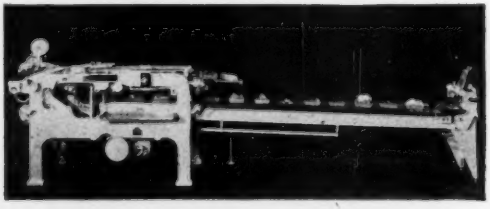
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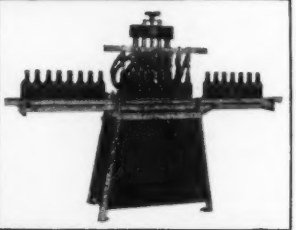
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the sequence repeated for 2-ft., 3-ft. and 4-ft. drops.

One jar broke on the sixth drop at a height of 4 ft., i.e., after having received 48 drops.

When the packs were opened after testing, it was apparent that the main cause of the jars breaking was inadequate internal cushioning. A modified pack with improved internal cushioning was made up in our laboratories.

To compare this with the original pack, we used drop tests starting at a height of 4 ft. and using the drop sequence given in Table IV.

To make further tests of the modifications, some packs were sent by post from the firm's works to Patra House and examined on arrival. They arrived in fair condition and although in one instance the corrugated fibreboard case was torn and punctured and all the four corners of the pack buckled, none of the jars was found to have broken.

As a result of these tests the following conclusions were reached:

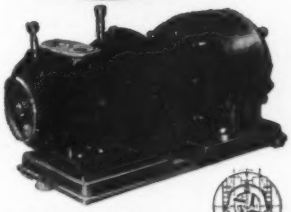
1. The main cause of the failure was inadequate internal cushioning. In no case was breakdown of the outer carton serious.

2. The modification suggested should improve the packages sufficiently to decrease the breakage rate considerably.

3. Attention was directed to the non-uniformity of the glass in the jars, which was a contributing factor to breakage.

CLARIFICATION—It has been called to our attention that there may be confusion regarding the status of "Transwrap" and "Stokeswrap" machines mentioned in the Planters Peanuts *Packaging's Hall of Fame* article in our August issue. The machines illustrated, used in Planters' Suffolk, Va., plant, all bear the name "Transwrap" and were supplied by the Stokes & Smith Co. of Philadelphia, at a time when that company was building machines under that brand name under sole license from the Transparent Wrap Machine Corp. of Hasbrouck Heights, N. J. Since that time, as has been previously announced in MODERN PACKAGING, the Transparent Wrap Machine Corp. has itself become the sole manufacturer of "Transwrap" machines, and machines built by Stokes & Smith, which is still a limited license of the Transparent Wrap Machine Corp., have been given the name of "Stokeswrap." Both companies are currently active producers and suppliers of machines under these respective trade names.—ED.

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INDIANAPOLIS MANUFACTURERS agents 20 years experience packaging field. Will represent within radius 200 miles calling on manufacturers, packers, jobbers, etc. Thorough coverage assured. Capable of Volume business. Lines wanted waterproof papers, bags, cans, folding and acetate cartons, corrosion and rust preventives, moistureproof barriers, polyethylene films, or any product applicable to packaging. Box 113, Modern Packaging.

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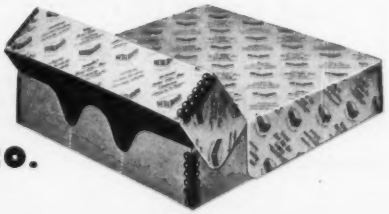
WANTED: Plastic scrap and rejects in any form. Cellulose Acetate, Butyrate, Polystyrene, Vinyl Polyethylene, etc. We pay top prices for clear, colored and printed scrap in any quantity. Box 781, Modern Packaging.

FOR SALE—Patents and Patents Applied for on Outstanding Machines long established in the packaging field. Cellophane, Ptiofilm and Polyethylene bag making machines. Box 107, Modern Packaging.

WANTED: PLASTIC Scrap and rejects. Polystyrene, Polyethylene, Vinyl, etc. Send samples to Industrial Plastic & Textile Co., 72 Woolsey Street, Irvington 11, New Jersey. Prompt service on Custom Grinding.

MANUFACTURER'S SALES Representative, Metropolitan New York. Many contacts with largest plastic and cellophane bag converters and plastic film soft goods fabricators. Interested in handling one or two additional allied products. Commission basis. Reply to Box 111, Modern Packaging.

The Metal Edge Method of Packaging is used profitably  for hundreds of products ... from tools  to turkey  ...from blankets  to auto parts  because it's expertly engineered to your specific production and merchandising requirements.



NATIONAL METAL EDGE BOX CO.

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Commerce Department reports artificial shortages

An unwarranted amount of scare buying has resulted in artificial shortages in some types of containers, the U. S. Dept. of Commerce reports. The scare buying has come about because it has become extremely difficult for industry to estimate its requirements for the remainder of the year in light of uncertain international developments, according to the Autumn 1950 issue of the Department's *Containers and Packaging Industry Report.*

The increased demand for containers comes at a time when in almost all categories containers and their raw materials are being produced at a higher rate than at any time in history. As examples, the report points out that metal-can output during 1949 hit an all-time industry production peak, consuming over 3.2 million tons of steel. During the first six months of 1950 this industry exceeded the 1949 rate by 13.9 per cent. In the non-metallic container field, fibre box shipments reached a new peak during the second quarter of 1950 of 17,869,-800 M sq. ft. Total production of all types of paper and paperboard materials is presently at the annual rate of approximately 24 million tons, an all-time peak. Glass-container output this year, based on the rate of production during the first six months will total over 100 million gross.

In a summary of the production and demand situation in the container field, the report states that a high level of business for producers is assured for the remainder of this year and that demand will be met from consumers of all categories of containers and packaging material.

A decided increase in consumer demand for food packaged in smaller containers is being felt in the industry, according to a survey conducted by the field offices of the Commerce Department and described in the report. Although the opinions of food retailers, container manufacturers, packers and canners interviewed in the survey differ as to the intensity of the trend toward small food containers, virtually all agree that there is a definite and expanding market for this size of container.

One company reported that competition created by the smaller container is now so intense that most firms have been forced to pack increasing quantities of their output in the smaller container sizes.

While it is recognized by many in the trade that a market for smaller food containers has definitely been established, there are some packers still exercising caution in expanding their facilities to meet the consumer demand for smaller food packages, the survey shows.

CORRECTION

We sincerely regret a transposition of cuts in the Equipment & Materials Department of our September issue which resulted in erroneous illustration of Amsco Packaging Machinery's rotary glue bag-sealing machine on p. 150 and American Machine & Foundry's new Super-Standard wrapper for bakery products on p. 154. The items with correct illustrations will be reprinted in this department in our November issue.



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WRITE FOR LITERATURE

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in crystal-clear **Vuepak**

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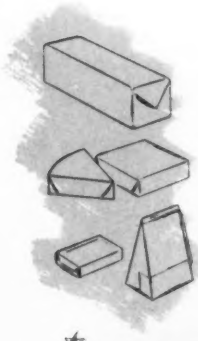
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